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Environmental Impact Assessment for Proposed Development of a 5 Storey New NBS Office Building on Plot No. 8, Block "A" in Salmin Sub-ward, Tambukareli Ward, Dodoma Municipality in Dodoma Region

Prepared by

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Declaration

This Environmental and Social Impact Statement has been prepared by;

Name and Responsibility	Signature
Eng. Venant E.K. Rwenyagira – Environmental Expert with extensive experience in Environmental Engineering of Construction Projects	

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EXECUTIVE SUMMARY

Title and Location of the Project

Proposed Development of a 5 storey New NBS Office Building in Plot No. 8 Block "A" Salmin Sub-ward, Tambukareli Ward, Dodoma Municipality in Dodoma Region

Project Proponent

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A brief outline and justification of the proposed project

Background and Description of the Project Environment

The National Bureau of Statistics (NBS) intends to construct a five storey building along Kikuyu Avenue, the road that links Dodoma Town and the University of Dodoma in Dodoma Municipality. Currently the NBS offices are housed in two different buildings located in different parts of Dar es Salaam city. The plan to build the office so that NBS activities are placed under one roof started in 2008. Before the construction of the new office building was started in Dar es Salaam, the Government issued a directive that the earmarked offices must be built in Dodoma. Upon receipt of this directive, NBS contacted the Dodoma Capital Development Authority (CDA) and secured an undeveloped plot No. 8 in area A, with a total coverage of 7,187 square meters. The secured premised will accommodate all statistics activities and functions and will act as a one-stop centre of statistics for better policies and development outcomes.

Prior to development of this new office building at the earmarked site in Dodoma, an environmental and social impact assessment is required to ascertain impacts likely to emanate from construction and operation of this new office building project. In order to facilitate this assignment, the National Bureau of Statistics commissioned Eng. Venant E.K. RWENYAGIRA from Environmental BENCHMARK, Consulting Civil-Environmental Engineers of Dar es Salaam, to carry out an Environmental and Social Impact Assessment for the proposed project.

Project Description

The proposed new NBS office building will be comprised of the following elements;

1. Five (5) floors all with usable area
2. 1500 square meters of usable space for 200 employees
3. Car parking area to accommodate employees vehicles, NBS vehicles and some space for official visitors about 100 parking slots
4. Data processing centre to take almost one floor
5. Store room for safe storage of various records including census records, survey records, etc.
6. Office rooms
7. Three different types of conference facility – including the main conference room, Board room, two mini-conference rooms
8. Elevators preferably 2 nos.
9. Fire escape preferably 2 nos. on different sides
10. Provision for generator and AC system
11. Power transformers and switch gear
12. Toilet facilities
13. Water storage facilities to cater for office use and a reserve for fire fighting.
14. Wastewater system connected to the Dodoma central sewer system discharging through manhole next to the site
15. Storm water drainage

Policies, Legal and Administrative Framework

The main policies and legal instruments applicable to the environment and of relevance to the proposed new office project were collected and reviewed. Administratively, the Minister responsible for environment under Vice President's Office is the overall responsible for all matters relating to environment, responsible for all policy matters, necessary for promotion, protection and sustainable management of environment in Tanzania. The Director of Environment coordinates various environmental management activities being undertaken by other agencies and promotes the integration of environment consideration into policies, plans and programmes, strategies and projects.

The Environmental Management Act (EMA) Cap 191 2004 gives the National Environment Management Council (NEMC) the overall responsibility of undertaking enforcement, compliance, review and monitoring of Environmental Impact Assessment.

Project stakeholders and their involvement in the EIA Process

Issues pertaining to construction of the new NBS office building and its environmental and social consequences were presented and discussed with the respective key stakeholders. Due to nature of project area, which is purely urban, with a combination of day workers and own business, consultants decided to make use of public representatives consultation meetings as the best means of getting public and stakeholders' views from both Interested and likely to be Affected Persons. Summarizing the concerns received during authorities consultation include

1. CDA to be contacted for all development issues
2. Observance of laws and requirements

3. The project area should be fenced to isolate the project activities from outsiders
4. Construction materials shall be covered which on transit
5. All truck drivers hauling construction materials shall observe limitations of tonnage otherwise will be penalized
6. Fortunately there is no traffic jam in Dodoma, therefore there are no limitation schedules for transportation of construction materials
7. Environmental department is there in the municipality to take care of any environmental issues
8. Earth roads used for work shall be sprinkled with water to suppress dust.
9. Drawings are approved by CDA and permit is issued by the CDA and supervision is by CDA
10. Utility companies (DUWASA., TANESCO, TTCL and fire department) are part of the Building Control Committee
11. Borrow pits are all privately operated and some by Village Councils
12. Drawings of good scale, plans, structural drawings and calculations are required for application off building permit
13. There is a sewerage system nearby, with a nominal bore of 250mm; therefore the connection to the central sewerage system must be straight forward.
14. There is adequate water supply but there is no enough head to convey the water to the 6th floor. Therefore a need for underground storage together with elevated storage tanks and pumps
15. Fire hydrants can suffice but the guidance shall be obtained from the Fire Department in the Municipality.
16. The project shall follow the procedures for water application. The requirements include the site plan, picture for individuals or the official rubber stamp in case of the government institutions.
17. All the fittings are bought by the project owner
18. Apply for water for works and on completion the water connection will be converted into a permanent connection during the operation phase of the building

As for public consultation, the main issues were;

1. Some compensation or "handshake" for plot care takers
2. Good relationship with the project neighbours
3. Communities around should be given first priority in employment for both skilled and non skilled labour
4. Possibility of illegitimate claims but the ward office knows those who have been using the project land
5. The way back in 1973 when CDA took land, some of those who lost land were never compensated. The government should compensate people for the loss suffered

Assessment of Impacts and Identification of Alternatives

Most of the issues mentioned by stakeholders are straight forward and they can be managed through proper site planning, proper building design and site management. Also the environmental impact assessment study identified that during pre-construction; there will be both negative and positive impacts such as;

Positive impacts

- Creation of employment opportunities to professional design teams

Negative impacts

- Vegetation/greenery clearance to accommodate NBS office building
- Deterioration of familiar, scenic and visual quality

During construction phase the impacts will be

Positive Impacts

- Employment during construction
- Improved local socio-economy
- Improved government revenue through collected taxes

Negative Impacts

- Change of common land use, especially cultivation and grazing
- Disturbance, particularly land scarring at borrow sites or sources of construction materials (sand, aggregates, stones,)
- Possible disturbances to historical and archaeological finds during site clearance
- Nuisance from noise and vibration during construction
- Increase in traffic levels to the surrounding area.
- Contamination of water from leakages of fuels and lubricants from the construction equipment
- Poor air quality from dust and emissions around the construction site and material hauling routes
- Possible injuries to neighbours from falling blocks, rocks and tools
- Solid and liquid waste generation
- Oil, grease, fuel spillage
- Poor occupational health and safety and associated risks
- Spread of diseases (HIV/AIDs, STIs or STDs)
- Soil erosion
- Risk to diseases transmission

During the operation phase of the office building the impacts will be;

Positive Impacts

- Employment to maintenance and service companies
- Release of presently occupied office space to other users

Negative Impacts

- Poor safety of employees in the office building block
- Generation of solid and liquid wastes

Mitigation measures

The study has suggested some measures to mitigate adverse impacts and these are:

- Vegetation clearance will be limited to the area necessary for permanent works some trees on the edge shall be left intact.
- On deterioration of familiar scenic views- The appearance of the proposed new office building will be made consistent and well blending with the new office buildings (CAG, NHIF and Treasury Square).
- On historical or archaeological finds - the contractor shall exercise necessary care so as not to damage artefacts or fossils uncovered during excavation operations and

shall provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the employer.

- The borrow sites are the ones used for sourcing all other construction materials for projects in Dodoma. Therefore the project will only contribute to land scarring and will not be the sole project causing this problem however part of the charges for purchase of construction materials shall channelled back for the rehabilitation or reinstatement of the borrow areas.
- On nuisance from noise and vibration- use of properly serviced and well maintained equipment, sensitization, use of Personal Protective Equipment and locating noisy equipment away from receptors, can avert the situation
- On increase in traffic levels and associated risks - only essential traffic will be allowed to the project area and observance of all traffic rules and limitation of speed,
- On water contamination- dripping pans to be used to contain all hydrocarbon leakages on construction equipment and refuelling on designated areas,
- On poor air quality - water sprinkling to reduce the dust at construction site, sound service of equipment,
- On injuries to passersby –site to be provided with the safety screen to protect neighbours from falling and flying objects
- On waste generation - Site housekeeping to minimise solid and liquid wastes generated from construction and other related activities such as food vending and petty businesses
- On health and safety - Workers shall be monitored through an occupational injury and illness reporting program, accident and near-misses reporting and investigation protocols. To reduce the spread of STDs and HIV/AIDS there will be worker's sensitization programs for workers and local community. Community leaders will be sensitised to cooperate with the contractor for success of this program. Also injuries and health problems associated with construction activities will be reduced through the implementation of the workers health, safety and first Aid training programs
- Safety of employees - fire-fighting equipment will be installed in the building. These will include portable fire extinguishers, provision of dry risers for fire fighting on the ground floor. Proper fire escape to be provided on both sides of the proposed building and security will be ensured through controlled entry and exit of all staff and guests and vehicles. However, security camera will be supplied to appropriate locations. In addition, specialised security companies will be engaged to provide security for the parking block.
- Soil erosion – administrate erosion control measures
- Generation of Solid and liquid wastes during project operation- Site housekeeping to minimise solid and liquid wastes generated from operational activities

Environmental and Social Management Plan

The environmental and social management plan has been prepared showing the likely impacts and corresponding mitigation measures, responsible institutions, time frame, target level and reporting structures including cost estimates. Overall the cost estimates for the environmental and social management plan amounted to USD 207,500. These cost estimates of various mitigation measures will be included in the total cost of the project in the bills of quantities.

Environmental Monitoring

The cost of monitoring during construction and later during operation has been included in this report and it is about USD 33,200. The monitoring plan includes parameters to be monitored, monitoring actions, responsibility and target level to be attained.

Cost Benefit Analysis

The study also carried out a cost benefit analysis of the project indicating project components and corresponding expected environmental and social impact costs. Overall the benefits to be realised in terms of office space for the National Bureau of Statistics in the Capital city of Dodoma are much higher than the project's environmental and socio-economic costs expected to be incurred by the project both during its development and operation.

Decommissioning

This is the final stage of the project when its useful life comes to the end. Most often decommissioning involves dismantling or demolition of structures and management of the resulting materials. Since the office building is expected to last for 50 years or so, the detailed decommissioning plan will be prepared at least 5 years before the end of the project. The decommissioning budget estimate of about USD 1,000,000 has also been made. The Project Proponent and Property Manager will have to set aside this fund to facilitate demolition and reinstatement of the area to match the surroundings. The estimated budget of decommissioning will be raised from government sources and determined during detailed decommissioning phase as deemed fit by the NBS. Alternatively, if at any time, the office building becomes unsafe or unusable to the state where its demolition is necessary to pave the way for a new project, and then a new Environmental Impact Assessment study will be initiated as required for a new project.

Conclusion and Recommendations

In conclusion, the findings of environmental impact assessment for the new office building project are positive overall on the social–economic environment of the Capital city of Dodoma. However, the impact of the project on the bio-physical environment is slight to moderate negative in pre-construction, construction and operation phases of the project.

In addition to this, the environmental impacts expected from the proposed development can be mitigated to acceptable/satisfactory standards except those associated with temporary interferences on daily activities of some surrounding neighbours, which are rated to be of low significance. The management of the identified negative impacts will require implementation of the necessary mitigation measures detailed in the Environmental and Social Management Plan. With adequate management of the identified impacts, as required by the EMP, the environmental risks and impacts of the proposed project can be minimized to acceptable levels. We recommend that the project gets an environmental clearance and thus be allowed to go to the next stage of architectural and engineering designs followed by construction.

ACKNOWLEDGEMENT

A number of individuals have made this Environmental Impact Statement possible through their commitment in terms of time and effort. National Bureau of Statistics (NBS) is grateful to all those who contributed in one way or the other to this document.

National Bureau of Statistics is greatly indebted to the Tambukareli Ward administration for facilitating consultation meetings and their comments and directives during consultation meetings. Most of their support is much thanked and their cooperation will also be needed for the whole project life span as they are the immediate authority within the project area.

NBS is also greatly indebted to the members of staff from different government institutions, private companies, non-governmental organizations, who at different stages of the assessment supplied relevant information, directives and comments to the environmental impact assessment team.

Lastly, NBS owes profound gratitude to the whole its staff team including the assessment team for making this Environmental Impact Assessment take the presentation it has.

ACRONYMS AND ABBREVIATIONS

^{0}C	Degrees Centigrade – Measure of Temperature
AC	Air Conditioning
AIDS	Acquired Immune Deficiency Syndrome
BOQ	Bill of Quantity
CAP.	Chapter
CBD	Central Business District
CBOs	Community Based Organizations
CCM	Chama Cha Mapinduzi (Tanzania Ruling Partly)
CDA	Capital Development Authority
CITC	Client Initiated Testing and Counselling
CITES	Convention of International Trade in Endangered Species
CLO	Community Liaison Officer
CRB	Contractors Registration Board
CTC	Care and Treatment Clinic
dB (A)	Decibel measured on scale A
DMC	Dodoma Municipal Council
DOE	Division of Environment
DUWASA	Dodoma Urban Water Supply and Sewerage Authority
E	East
ECBA	Environmental Cost Benefit Analysis
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMA	Environmental Management Act
EMP	Environmental Management Plan
EMP	Environmental Management Plan
ERB	Engineering Registration Board
ESMP	Environmental and Social Management Plan
Esq.	Square meter
EWURA	Energy and Water Utilities Authority
GDP	Gross Domestic Product
GDP	Gross Domestic Product
HCT	HIV Counselling and Testing
HIV/AIDS	Human Immune Deficiency Virus/Acquired Immune Deficiency Syndrome
HSE	Health Safety and Environment
I&AP	Interested and Affected Parties
IMR	Infant Mortality Rate
ITV	Independent Television
kg	Kilogram (unit of weight)
LT	Long Term
M^3	Cubic Meters
MACC	Municipal Aids Control Coordinator
MAF	Mission Aviation Fellowship Company
MARPOL	Marine Pollution Convention
MEAs	Multilateral Environmental Agreements
MOH	Ministry of Health
MT	Medium Tem
NAWAPO	National Water Policy
NBS	National Bureau of Statistics

NBS	National Bureau of Statistics
NE	North East
NEMC	National Environmental Management Council
NHIF	National Health Insurance Fund
NEP	National Environmental Policy
CAG	Controller and Auditor General
DC	District Commissioner
I &APS	Interested and Likely to be Affected Persons
NGO	Non-Governmental Organization
NS	North South
NSS	National Statistical System
NSSF	National Social Security Fund
^{O}C	Degrees Centigrade (Unit of measure for Temperature)
OP/BP	Operational Policy / Best Practice
IUCN	International Union of Conservation of Nature
LEAP	List of East African Plant species
UNCED	United Nations Conference on Environment and Development
OSHA	Occupational Safety and Health Authority
PCCB	Prevention and Control of Corruption Bureau
PEP	Post-Exposure Prevention
PICT	Provider Initiated Testing and Counselling
PLHA	People Living with HIV/AIDS
PLHIV	People Living with HIV
PMCTC	Prevention of Mother to Child Transmission Counselling
PMO-RALG	Prime Minister's Office Regional Administration and Local Government
PPE	Personal Protective Equipment
PPF	Parastatal Pensions Fund
R.E.	Revised Edition
REME	Regional Environmental Management Expert
RFA	Radio Free Africa
RTD	Radio Tanzania Dar es Salaam
S	South
SE	South East
ST	Short Term
STDs	Sexually Transmitted Diseases
SUMATRA	Surface and Marine Transport Authority
TANESCO	Tanzania Electric Supply Company
TANROADS	Tanzania National Roads Agency
TFR	Total Fertility Rate
THMIS	Tanzania HIV/AIDS and Malaria Indicator Survey
TOR	Terms of Reference
TTCL	Tanzania Telecommunications Company Limited
TVT	Television ya Taifa (National Television)
U5MR	Under Fives Mortality Rate
USD	United States Dollar
VCT	Voluntary Counselling and Testing
VETA	Vocational Education Training Authority
VP	Vice President
VPO	Vice President's Office
WDC	Ward Development Committee
WEO	Ward Executive Officer

1. INTRODUCTION

1.1 Background

The National Bureau of Statistics (NBS) was established as an autonomous public office by the Statistics Act No. 9 of 2015 which repealed the Statistics Act No. 1 of 2002, and was given a mandate to provide official statistics to the Government, business community and the public at large. The NBS was established following the transformation of the former Central Bureau of Statistics which was a department under the Planning Commission. This transformation of NBS from a Ministerial Department to an Executive Agency was aimed at enhancing effectiveness and efficiency in the overall process of statistical production. .

The Act also gave NBS the mandate to be a co-coordinating agency, within the National Statistical System (NSS) to ensure that quality official statistics is produced. Before the enactment of the Statistics Act No. 9 of 2015, the NBS was one of the Government Executive Agencies which was established on the 26thMarch, 1999 under the Executive Agencies Act, 1997.

Since its establishment in 1997, the National Bureau of Statistics was housed in two different buildings located in two different parts of downtown Dar es Salaam. The NBS headquarters is in an old building which makes part of three attached buildings occupied by the National Bureau of Statistics, Mapping Department of the Ministry of Lands, Housing and Human Settlements Development and the former Prisons Department under the Ministry of Home Affairs, which has now moved out to another building.

The second building that houses NBS stores are located on Mkwepu Street in the Central Business District of Dar es Salaam. The building where the stores are located comprise of offices on the ground and first floors and a residential accommodation on the second floor. This is equally an old building owned by the National Housing Corporation.

The status of NBS offices being scattered in different parts of Dar es Salaam city was worsened by an ever increasing number of motor vehicles in the city. This situation forced NBS to initiate some plans in 2008 to construct a multi storey office building making its operations to be under one roof.

Before the construction of the new office building was started in Dar es Salaam, the Government issued the directive that the earmarked offices must be built in Dodoma. Upon receipt of this directive, NBS contacted the Dodoma Capital Development Authority and secured an undeveloped plot No. 8 in area A, with a total coverage of 7,187 square meters. It is assumed that the secured area has adequate space for at least 200 headquarters staff, computer centre, conference and training rooms, library facilities, stores, etc. The secured premised will accommodate all statistics activities and functions and will act as a one-stop centre of statistics for better policies and development outcomes. The new premises shall also enable NBS staff to work in a safe and healthy environment which is a prerequisite for any serious and important work such as statistical data processing for all national censuses and surveys.

Now, prior to development of this new office building at the earmarked site in Dodoma, an environmental and social impact assessment is required to ascertain impacts likely to emanate from construction and operation of this new office building project.

In order to facilitate this assignment, the National Bureau of Statistics commissioned Eng. Venant E.K. RWENYAGIRA from Environmental BENCHMARK, Consulting Civil-Environmental Engineers of Dar es Salaam, to carry out an Environmental and Social Impact Assessment for the proposed project.

In line with the EIA and Audit Regulations Part III- particularly regulation 6, the procedures for registration of the project with the National Environment Management Council (NEMC) were completed, and the Project Brief was prepared and submitted to NEMC on 28th September 2016 for project screening as required under the EIA and Audit Regulations, 2005. The screening decision received on 6th October 2016, determined that the full environmental impact assessment is required and the scoping exercise was carried out for two weeks from 12th September through to 22nd September 2016 weekend days excluded. Therefore the whole environmental assessment assignment was carried out between September and November 2016.

1.2 Rationale for Carrying out an Environmental Impact Assessment

According to the First Schedule of the Environmental Impact Assessment and Audit Regulations, 2005 made under sections 82(1) and 230 (2) (h) and (q) of the Environmental Management Act No. 20 of 2004, the proposed project directly falls under the list of projects requiring EIA and therefore the full Environmental Impact Assessment is mandatory.

The proposed project falls under classes 14 and 22 with the highlighted sub-sections of the project development.

Table 1: Extract from the First Schedule of the EIA and Audit Regulations 2005

14. Building and Civil Engineering Industries.
- (i) Industrial and housing Estate
- (ii) Major urban projects (multi-storey building, motor terminals, markets etc)
- (iii) Construction and expansion/upgrading of roads, harbours, ship yards, fishing harbours, air fields and ports, railways and pipelines
- (iv) Developments on beach fronts

22 Land development planning, land reclamation, housing and human settlements
- (i) Resettlement/relocation of people and animals eg. establishment of refugee camps
- (ii) Establishment or expansion of industrial estates
- (iii) Establishment of estates for residential/commercial purposes
- (iv) Major urban projects (multi-storey building, motor terminals, markets etc)
- (v) Construction and expansion of hospitals with large bed capacity
- (vi) Land reclamation including land under water bodies.
- (vii) Development of residential and commercial estates on ecologically sensitive areas including beach fronts
- (viii) Dredging of bars, greyones, dykes and estuaries

Now, since the project is envisaged to involve a multi-storey building and land development, as indicated in the extract above, the report is hereby prepared, presenting all the necessary requirements as stipulated in the regulations. This report will guide NEMC in subsequent stages of recommending to the minister to issue an EIA certificate to the NBS.

As to financing of the project, it is expected that the proposed new NBS office will be supported by the World Bank. The WB has keen interest in protection of the environment for all investment projects supported under its programs. Therefore the project under consideration has to be in line with its safeguards policies which in this case include Environmental Assessment (OP/BP 4.01)

1.3 Scope of the Environmental Impact Statement

The scope of the environmental impact assessment study as amplified in the Terms of Reference submitted to NEMC earlier in the process may be presented in the summary form as follows:

- An environmental impact assessment to take into account environmental, social, cultural, economic and legal considerations,
- Identification of the anticipated environmental impacts of the office building project construction activities and the scale of the impacts including the extent of vegetation clearance, noise and dust pollution, disturbances to neighbours, materials to be used, and handling of solid and liquid wastes to be generated.
- identification and analysis of alternatives to the proposed project and its components;
- propose mitigation measures to be taken during and after the implementation of the project; and
- Development of an environmental management plan with mechanisms for monitoring and evaluating the compliance and environmental performance which shall include the cost of mitigation measures and the time frame of implementing the measures.

1.4 Presentation of the Environmental Impact Statement

Based on the Consultants' experience in preparation of the EIS, this statement has been presented in the format suggested in the Environmental Impact Assessment and Audit Regulations, 2005 regulation 18 (2), including the regular comments from NEMC such as name of reviewer on the cover page and the stakeholders consultation process. Therefore the presentation has the following headings;

- Cover page with title of the project, location, project proponent, consultant contact addresses, name and contact particulars of the EIS Reviewer (NEMC), and finally the corresponding date of submission
- Executive summary;
- Acknowledgement;
- Acronyms;
- Introduction;
- Project background and description;
- Policy, administrative and legal framework;
- Baseline or existing conditions;
- Stakeholders consultation and public participation process;

- Assessment of impacts and identification of alternatives;
- Impacts management or environmental mitigation measures;
- Environmental and social management plan;
- Environmental and social monitoring plan;
- Resource evaluation or cost benefit analysis;
- Decommissioning;
- Summary and conclusions
- References; and
- Appendices;

2. PROPOSED PROJECT DESCRIPTION

2.1 Objective and Purpose of the Project

The required new office premises is aimed at accommodating all National Bureau of Statistics activities and functions and will be a one-stop centre of statistics for better policies and development outcomes. The new premises in Dodoma shall also enable National Bureau of Statistics staff to work in a safe and healthy environment which is a prerequisite for any serious work.

2.2 Project Location

The proposed project is envisaged to be built in Dodoma Region within the boundaries of Dodoma Municipality along the road that branches off from Kikuyu Avenue, the main road that links Dodoma town and the University of Dodoma. The targeted plot has an area of 7,187 square meters. The coordinates of one point in the centre of the project area are $6^0$11' 19.67''S; $35^0$45'46.42''E, shown on Google earth image presented as Figure 2 below.

2.3 Project Neighbours and Utilities

The project site is sharing its boundaries with the following plots and structures;

- On the north side the project site shares the border with the Dodoma Convention Centre owned by Chama Cha Mapinduzi (See Figure 3)
- On west side the project site shares the border with the Plot belonging to the Planning Commission (The plot is yet to be developed) (See Figure 4)
- South side the project site is adjacent to undeveloped site allocated to Prevention and Combating Corruption Bureau (PCCB) - (See Figure 5)
- On the East side the project site is adjacent to the power line and the road in between. The plot beyond the power line is also undeveloped and it is allocated to Dodoma Municipal Council (See Figure 6)

Each one of these neighbouring structures is likely to be affected by the proposed project activities as outlined in this report

With the exception of the Dodoma Convention Centre which is built and used for meetings and conferences, the remaining project area and neighbouring plots are all undeveloped and the current land use is cultivation during cropping season and grazing during the remainder of the year when there are no crops.

There are some utilities next to the proposed project site. These utilities include electric power poles, water reticulation system and the sewer line. The electric power line is running parallel with the access road to the site located about 5m from the project plot boundary line. The water supply line is also running along the north-south direction about 10m from the plot boundary line.

The sewer line is located on the other side of Kikuvu Avenue about 100m from the project site on the northern direction.

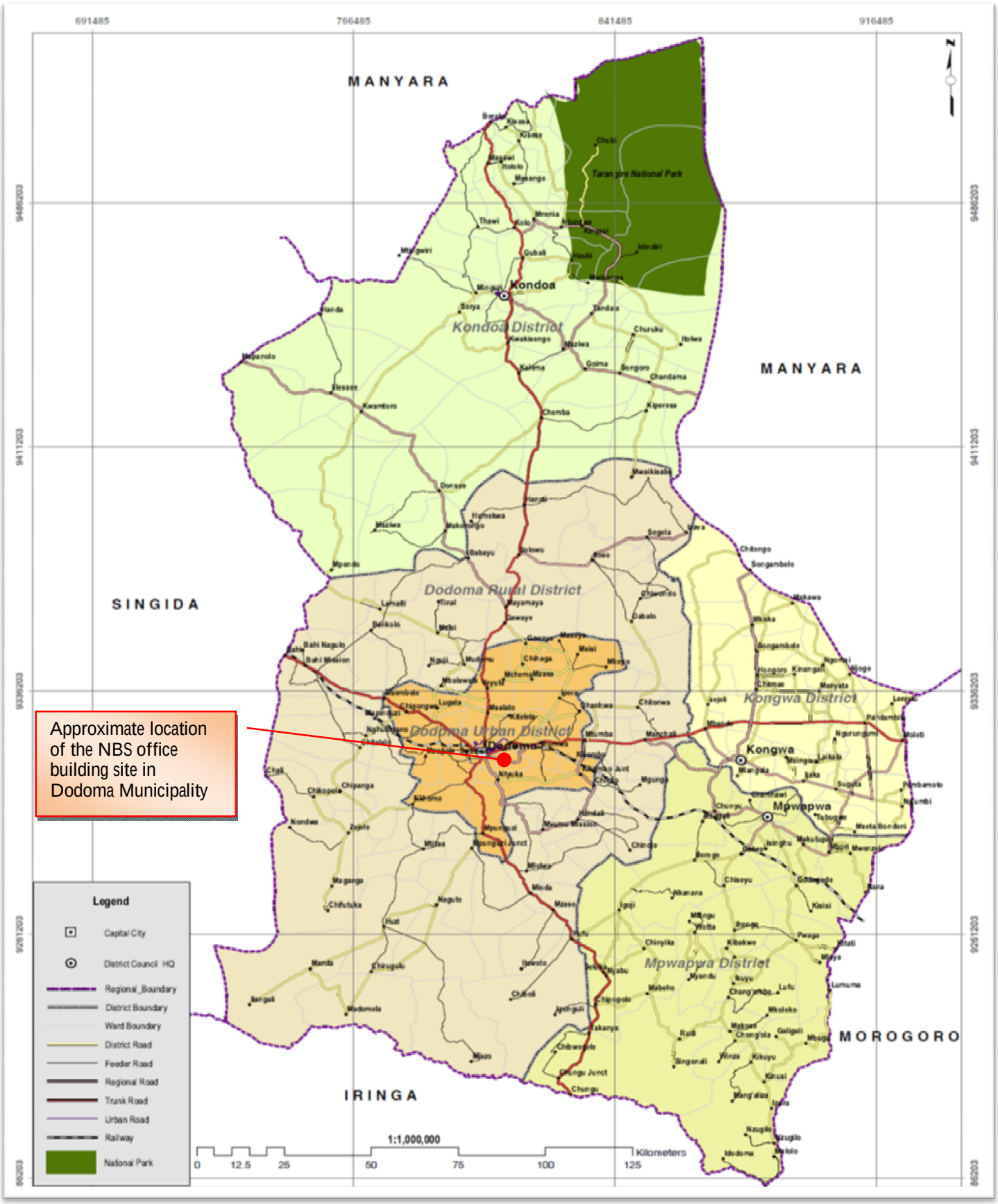

Figure 1: Dodoma region map showing the location of the proposed NBS office building project (Source: PMO- RALG July 2008)

To a finer detail, the project will be constructed along the road that branches off from Kikuyu Avenue, the main road that links Dodoma Town and University of Dodoma, in the location behind the CCM Convention Centre. The location of which is shown on the Google earth image presented on Figure 2 below.

Figure 2: Google earth image showing the location of the plot where the NBS office building is expected to be erected.

Figure 3: Project site facing Dodoma Convention Centre on the north side (Source: Field picture recorded by Consultant on 14th September 2016)

Figure 4: Proposed site is bordering the plot for Planning Commission on west side. The multi-storey building on the far right background belongs to Controller and Auditor General (Source: Field picture recorded by Consultant on 14th September 2016)

Figure 5: Project site sharing the border with undeveloped plot allocated to Prevention and Combating of Corruption Bureau (PCCB) on the South side (Source: Field picture recorded by Consultant on 14th September 2016

Figure 6: On the East side the project site is adjacent to the power line and the road in between. The plot beyond the power line is also undeveloped and it is allocated to Dodoma Municipal Council (Source: Field picture recorded by Consultant on 14th September 2016)

2.4 Preliminary Design of the New Office building

As earlier presented, the targeted plot has the total area of 7,187 sq.m. The preliminary design of the NBS office building is proposed to meet the requirements of Capital Development Authority development conditions with the following requirements

Table 2: CDA Development Conditions

Building Envelop	
Plot Coverage	20% (minimum) – 40% (maximum)
Building Height	4 storeys (minimum)
Plot Ratio	1:4 (Minimum)
Setbacks	
Front setback	10m (Minimum)
Side setback	10m (Minimum)
Rear setback	10m (Minimum)
Parking spaces	1 per 40 sq.m. Gross floor space

Based on these development conditions the proposed office building will be comprised of the following elements;

1. Five (5) floors all with usable area
2. 1500 square meters of usable space for 200 employees
3. Car parking area to accommodate employees vehicles, NBS vehicles and some space for official visitors about 100 parking slots
4. Data processing centre to take almost one floor

5. Store room for safe storage of various records including census records, survey records, etc.
6. Office rooms
7. Three different types of conference facility – including the main conference room, board room, two mini-conference rooms
8. Elevators preferably 2 nos.
9. Fire escape preferably 2 nos. on different sides
10. Provision for generator and AC system
11. Power transformers and switch gear
12. Toilet facilities
13. Water storage facilities to cater for office use and a reserve for fire fighting.
14. Wastewater system connected to the Dodoma central sewer system discharging through manhole next to the site
15. Storm water drainage
16. Emergency assembly area.

Overall, the proposed building will take the shape presented in three dimension presented below on figure 7.

Figure 7: Proposed NBS new office building in three dimension (3D) presentation

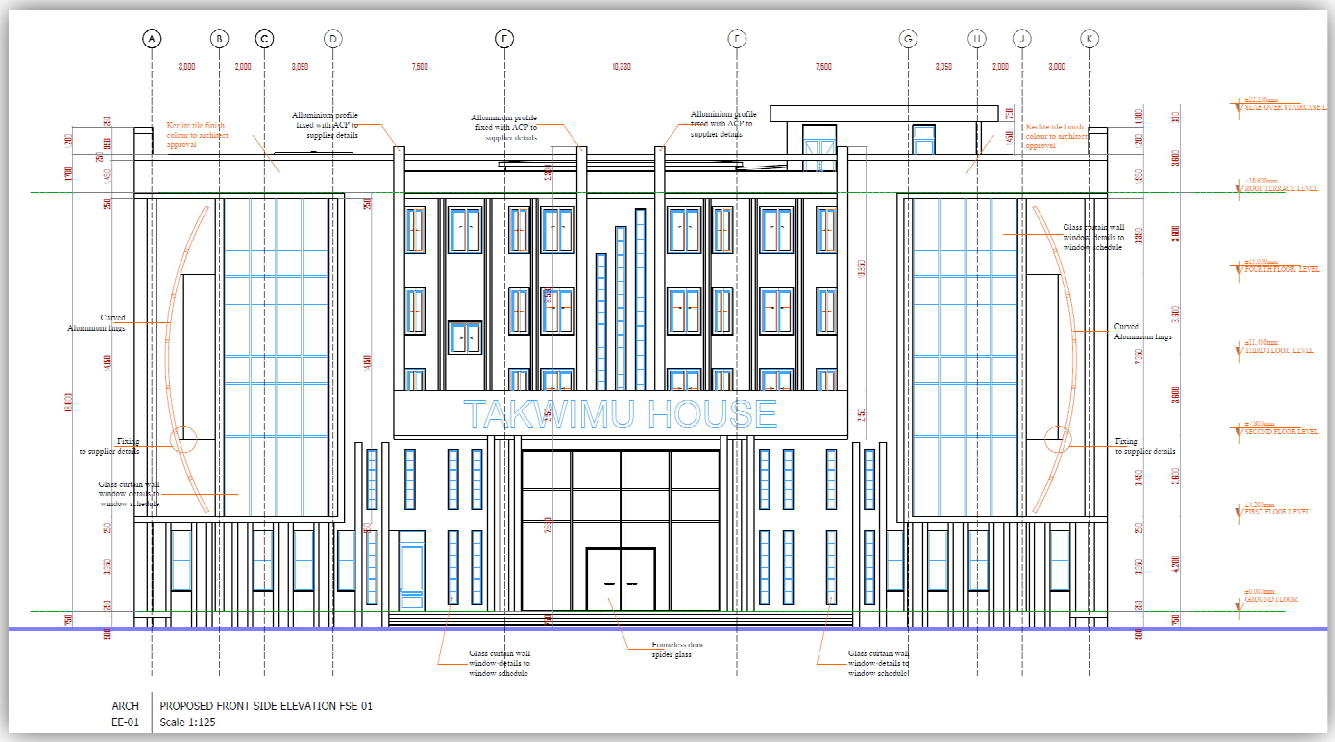

Figure 8: Front side elevation of the proposed new office building on

Proposed activities on plot and each floor, size of each component, floor and capacity is presented on table 3 below

Table 3: Building Component functional activities

s/n	Size of floor (m^2) Plinth area	Floor Activities / Functions
Plot Area	7,187	Main building, Transformer and Generator House , Guard house 2 nos., parking for 90 vehicles, Ground water storage tanks,
Ground floor	1,220	HR Pool, Meeting room, Pool, Waiting Lounge, Reception Counter and Command centre, Salary Room, Strong Room, Data room, Documentations Room, Head and Assistant Registry, Confidential registry record room, Principal Officers, Manager , Open Registry Pool, Open Registry record room, Principal officer, Manager, Store, WCs, Waiting area, Bookshop Fire escape staircase, Atrium
First Floor	1,040	Head Procurement unit, Principal officer of procurement Unit, IT Maintenance Room, Documentation Room, Pool for Procurement Unit, Head (2nos), Officers (2nos), Data Room, Population census pool, Head GIS, GIS Pool, GIS Lab, Meeting Room Data Processing Room, Water Closets for female and males, Server room, IT Pool Office, IT Principal Officers, IT Manager,

		Fire escape staircase, Atrium
Second Floor	1,105	Manager, Principal officers, Heads (2nos.), Officers, Data room, Pool, Information and waiting room, Principal officers, Meeting room, Pool, Managers (2nos.), Pool, Principal Officers, Manager, Pool, WCs, Manager and Principal Officers
Third Floor	1,105	Population and census manager, Principal Statistics, Directors (4nos), Data Room, Meeting room, Manager 2 nos., Communication and Dissemination Unit, Consultants Office, Principal Officers, Manager, Pool 2 nos., WCs (Male and female), Manager, Principal Officers
Forth Floor	1,040	DG's Office, Board Room, Personal Secretary, DG VIP Lounge, Personal Assistant, Internal Audit, Manager, Data room, Serving area, Mess area, Kitchen, Conference hall for 180 people capacity, Manager, Director, Pool, Planning unit, WCs (Female and Male), Legal Services, Legal Documents, Waiting and Escape staircase
Roof Terrace	1,306	Air conditioning system, elevated storage tanks, open roof terrace,

2.5 Project activities

2.5.1 Pre-construction Activities

Since preliminary engineering designs of the project are almost completed, then the outcome of this environmental and social impact assessment will provide an input in the preparation of detailed engineering design. Once these final design phases are completed, tenders will be floated to allow reputable contractors to bid for the project. Tenders will be evaluated and awarded to a successful contractor who will then start mobilization of the human resource and equipment after completion of contract formalities and site handing over processes.

Preparation of the proposed site will involve clearing the site and removal of the unwanted soil. (See figure 9) below, all will be done to attain the total area of about 7,187sq meters required for the proposed new building and associated facilities such as guard house, standby generator house and underground water storage.

All project activities are supposed to be carried out within the boundaries of the identified project site without disturbing the neighbouring facilities. In order to ensure this, the project proponent will facilitate the Contractor in fencing off the entire site perimeter with corrugated iron sheets or any other suitable material as it will be determined during project implementation.

The expected number of employees in this pre-construction phase will be about 10 professionals and 30 non-skilled labourers. The number of professionals includes

surveyors, supervising engineers, foremen, drivers, plant operators all involved in preliminary activities.

Figure 9: Existing vegetation to be cleared to pave way for proposed new works (Source: Field picture recorded by Consultant on 14th September 2016)

Also, as required, the Contractor will hire labour and erect necessary temporary facilities to cater for offices and storage yards within the construction site or outside the site as it may be agreed and permitted by the Capital Development Authorities.

Mobilization phase will also involve purchase and stockpiling of the materials such as aggregates, sand, cement, timber and reinforcing steel. Other construction equipment such as scaffolding, pile driving equipment, crane, will be mobilised to the site of works as need arises.

During the environmental impact assessment activities, some geotechnical investigations works were on going to establish the subsurface conditions as it can be seen on Figure 10 below.

Table 4: Estimated wastes during the pre-construction phase

Type of wastes generated	**Estimated Quantity**	**Management Method**	**Final disposal**
Solid wastes (Paper, packaging material, food remains, overburden spoil, mobilization waste, tins and plastics)	15m^3/day	Trucks will be used to felly the waste from site	Nala Dumping site on the Way to Singida
Liquid wastes estimated at 150 litres	6000 l/day	Linked to the	Swaswa

per capita per day. This waste is mainly domestic wastes from 40 people during mobilization phase		central sewer system that drains to Waste Stabilization Ponds	Waste Stabilization Ponds

Figure 10: Geotechnical investigations equipment being mounted on site during the assessment exercise. (Source: Field picture recorded by Consultant on 14th September 2016)

On occupational health and safety point of view, the project site will be registered with OSHA as a place of work where all aspects of occupational health and safety will be practiced by all including consultants, contractors and subcontractors.

2.5.2 Construction phase of the NBS office building

Upon completion of preliminary activities involving erection of site offices, storage facilities and services (water, wastewater and electricity) as required, the actual construction work of office building block substructure will start which will involve;

- Setting out
- Excavation for foundations
- Concreting foundations/ground floor
- Backfilling and disposal of overburden

Once the substructure is completed, works for the superstructure will start with columns and subsequent cover slabs ready to receive more floors up to the final floor, then roofing, installation of services including water, wastewater and electricity reticulation, roads and finally finishing and landscaping ready for handing over the building.

The expected number of employees in this construction phase will be about 50 professionals and 150 non-skilled labourers. The number of professionals includes surveyors, supervising engineers, foremen, painters, brick layers, drivers, plant operators, carpenters, steel personnel, concrete persons all involved in construction activities.

Table 5: Estimated solid wastes production during construction phase of the office building

Type of wastes generated	Estimated Quantity	Management Method	Final disposal
Solid wastes (Paper, packaging material, food remains, timber planks, construction waste including tins, glass and plastics bottles)	$30m^3$/day	Contractors trucks will be used to felly the waste from site	Nala Dumping site on the Way to Singida
Liquid wastes estimated at 150 litres per capita per day. This waste is mainly domestic wastes from 200 people during construction phase	30,000 l/day	Linked to the central sewer system that drains to Waste Stabilization Ponds	Swaswa Waste Stabilization Ponds

2.5.3 Contractors Demobilization Phase

Contractor's demobilization phase will involve clearing all the site activities in terms of tiding up of all site facilities and demobilization of all construction equipment. Disposal of any remaining unwanted material will also be carried out during this contractor's demobilization phase.

Upon completion of contractor's obligations, the structure will be handed over to the Project Proponent, National Bureau of Statistics for the operation phase, that is, for use as an office for National Statistics Centre.

The expected number of employees in this demobilization phase will be about 10 professionals and 30 non-skilled labourers. The number of professionals includes utilities supervising engineers, foremen, drivers, plant operators all involved in demobilization activities.

2.5.4 Operation Phase

Once construction of the office building is completed, the actual purpose of the facility will start, that is accommodating at least 200 employees and other basic needs such as car parking for employees and institution's vehicles, data processing, store room for storage of census records, office rooms, three types of conference facilities, lift and fire escape and room for back-up generators and AC- systems.

Table 6: Estimated solid wastes production during operation phase of the office building

Type of wastes generated	Estimated Quantity	Management Method	Final disposal
Solid wastes from operation activities	Packaging materials (card board, wood pallets and barrels) estimated at 350kg/week on average	Collected to skip buckets	Nala Dumping site on the Way to Singida
	Wastes from offices (paper,), etc estimated 100kg/day	Collected to skip buckets	
	GIS and IT Maintenance e-waste (tonners, drums and cartridges, used fluorescent lights etc) estimated at 20 l/week	Collected in separate to skip buckets for disposal to authorised dealers	Authorised dealers/recyclers
	Food remains and leftovers and plastics estimated 100l/day	Collected to skip buckets	Nala Dumping site on the Way to Singida
Liquid wastes estimated at 50 litres per employee per day. This waste is mainly domestic wastes from 200 employees during operation phase. This is only day production	10,000 litres per day	Linked to central sewer system flowing to the waste stabilization ponds	Swaswa Waste Stabilization Ponds

2.6 Materials to be Used, Waste Generation and Disposal Methods

2.6.1 Mobilization phase materials

Site Preparation

Preparation of the proposed site will automatically result into removal of existing vegetation around the site. All unsuitable top soil or soil that is excavated to get the required level will be resulting into huge volumes of unwanted soil ready to be disposed off site All unusable top soil or excavated debris will be collected, transported and tipped on designated sanitary land fill in Dodoma Municipality. Alternatively, this unwanted soil and debris may be used to reclaim low laying areas where such soil and debris will improve landscape and will not become an eye sore.

2.6.2 Construction Phase Materials and Equipment

Since the building will be mainly a reinforced concrete structure, the main construction materials will be aggregates, cement, sand, reinforcing steel and water. Other requirements such as timber, formwork, scaffolding etc, will also be required as included

in the table below. The sources and estimate of these construction materials is shown on table 7 below.

Table 7: Materials estimated quantities and sources

Construction Materials/ Equipments	Estimated Quantity	Sources
Stones /Aggregates	18,200 tons	Kigongwe Quarry about 20km from Dodoma Region. The quarry is privately owned by those with Mining Licenses from the Ministry of Energy and Minerals
Cement	5,000 tons	Twiga, Tembo, Rhino, Dangote and Simba Cement Factories in Tanzania
Sand	10,500 tons	Mtumba borrow areas about 18km from Dodoma Town. Also the borrow pits are privately owned by those possessing Mining Licenses from the Ministry of Energy and Minerals.
Reinforcing steel/bars, binding wire etc	10,000 tons	Reinforcement outlets mainly factories and possibly hardware shops in Dar es Salaam and Dodoma
Water	200 m^3 per day	DUWASA nearby water line
Electric power	450kVa	TANESCO and Standby Generator
Nails	350 kg	Hardware outlets in Dodoma and Dar es Salaam
Formwork (Marine Plywood)	4,150 sq. m	Imported
Timber	10,000 m^3	Sao Hill
Roofing material (Harvey tiles? Industrial troughs	600 sq m	Hardware outlets
Scaffolding	15,000 m	Rental from other companies

Wastes

Biodegradable materials wastes such as food leftovers, cardboards, papers will be collected and disposed off along with other Dodoma Municipal wastes in sanitary landfills. Other materials such as plastics, metal straps, reinforcing bars, unusable timber crates, steel cable pieces, pipes, etc., will be collected and transported to recycling centres within the Dodoma Municipality premises or Dar es Salaam where there are more requirements of scrap metals and other materials. .

Wastewater and Drainage and Treatment

There is a central sewer system running along the streets in the project area. The waste water from the construction site, particularly the toilets will be linked to the nearby central sewer system. From these sewer lines, the wastewater will be collected and drained to join other wastewater from the Municipality and disposed off after treatment in the waste stabilization ponds located at Swaswa area in the north east of Dodoma Town.

2.6.3 Demobilization Material wastes

Upon completion of construction activities, all construction waste materials such plastics, glass and metal plates ideal for recycling will be collected for recycling in Dodoma or Dar es Salaam. Unusable aggregates with concrete debris, chippings, sand will be sieved and the good one will be separated for reuse at other sites by the contractor. Natural grass to match the existing will be planted in all areas around the new office building.

2.6.4 Operation Phase Materials

During operation phase, the NBS office is expected to be used for 200 people. Estimating the water demand for office use at 100 litres per person per day, this is equivalent to 20,000 litres per day. For consideration of the underground storage of water supply, then a $25m^3$ tank is proposed to be constructed. Water for fire fighting is expected to be drawn from the fire hydrant which according to the designs of Dodoma water supply distribution network will be connected to the water mains at strategic points with outlets at street level or through extensions at a higher level.

2.7 Project Boundaries

2.7.1 Area of Influence of the Proposed Project

The area of influence of the proposed new NBS Office building, in the Dodoma Municipality, may be considered under the following categories

- ✓ The physical area to receive permanent works- an area of intense physical contact
- ✓ The whole neighbourhood of the project area including in Tambukareli ward
- ✓ Also the roads from the quarry and borrow pits will be equally influenced as most of the construction materials will be loaded transported and delivered to site through the access roads under consideration.
- ✓ Sources of construction materials including places such as Kigongwe Quarry where aggregates will be sourced. This is located about 20km from Dodoma town. Sand will be sourced from Mtumba borrow pits about 18km from Dodoma town. Also cement factories in Dar es Salaam, Tanga, Mbeya where cement will be procured will somewhat be influenced by the project activities. All these locations may be considered to be within project boundaries as they may influence its impacts to these locations.

Looking at these areas of influence which will be linked to the project site, it is evident that the boundary of the project may be considered in terms of spatial, temporal and institutional boundaries as presented below in the subsequent sub sections

2.7.2 Spatial Boundaries

Spatial boundaries refer to impact area coverage. Some of impacts have local (sub-ward, ward, division and district) or regional or international implications. On impact area coverage we can consider two concentric influence zones namely;

NBS Project site,- The whole area earmarked by NBS as project site is about 94.24m long by 78.20m wide which gives an area of approximately 7,187 square meters of land. This area is further divided into small land parcels, each of which will receive intended structures such as the main building, parking area, lawns and greenery places, power house, guard posts, etc. Overall, these land parcels are the areas which will receive the

most intense physical impacts of construction works as some are targeted to receive permanent works as shown on the site layout plan below.

Figure 11: Approved Survey Plan of Plot 16-13 in Block A- The project plot No 8 is highlighted in red

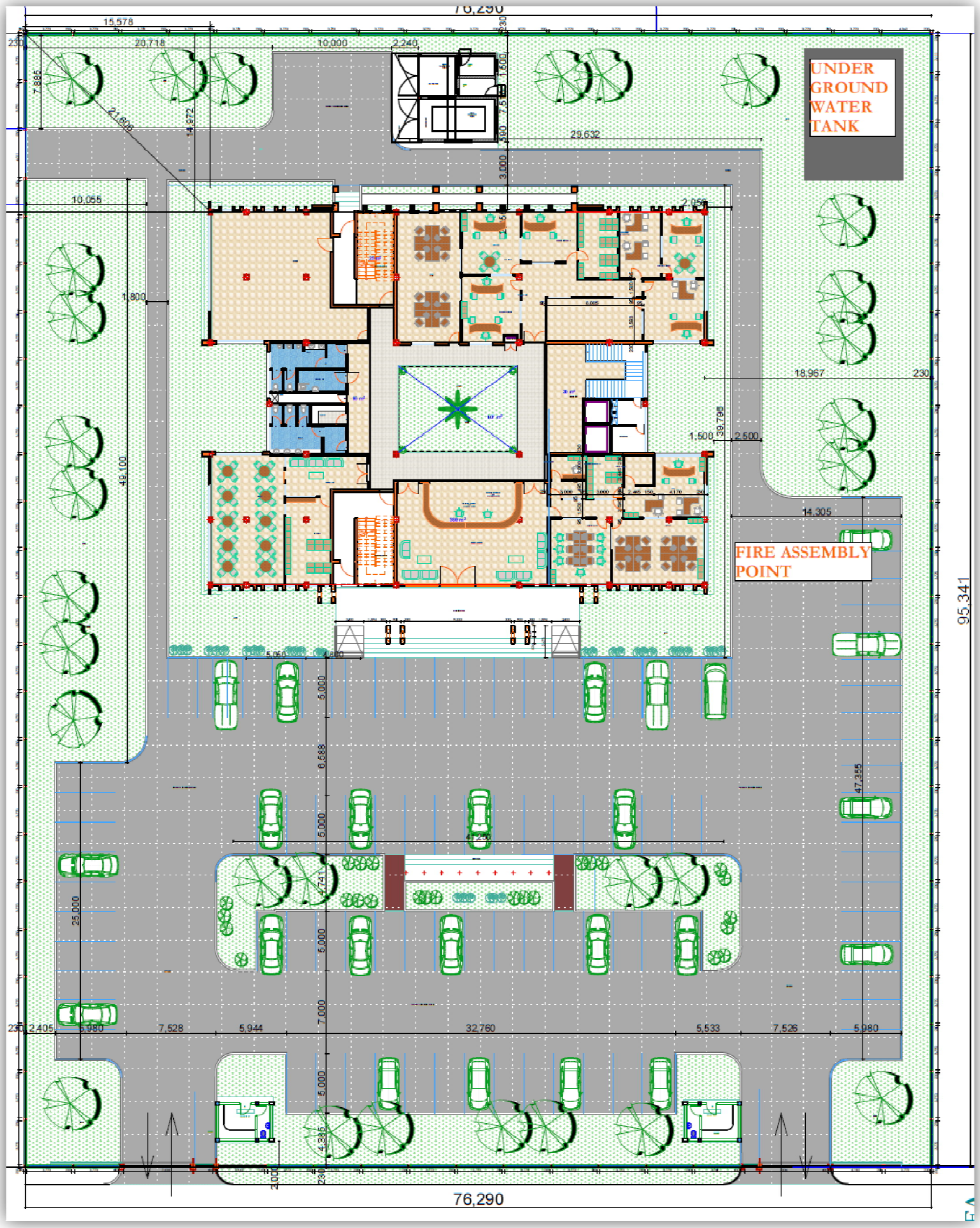

Figure 12: Site layout plan showing components of the area that will receive intense construction works during construction phase of the project

Outside this area, there are neighbouring structures immediately and adjacent to the boundary wall of the project area. These surrounding houses may be regarded as immediate "receptors" of some of construction and operation impacts such as noise, vibration and dust. Undoubtedly these will equally have significant impacts, if mitigation measures are not proposed and implemented.

Wider Project Area, this is the area that will coincide with the traffic basin or access road network that will be used by project trucks during delivery of construction materials and equipment. The influence will be dictated by the number of heavy trucks needed at once to haul construction materials. Therefore the project impacts either positive or negative are likely to extend beyond the boundaries of the project area following the road network to sources of materials and back to the project site. The detailed Environmental Impact Assessment will involve carrying out a thorough analysis of these spatial boundaries. Of course alternative means of delivering building materials at night or during off-peak hours can be considered if some interference with the regular day traffic may be regarded as a significant project impact.

2.7.3 Temporal Boundaries

Temporal boundaries are referring to project life span and the reversibility of negative impacts. The project under consideration is envisaged to last for over 50 years from the date of construction to the date when some structures may need replacement or major refurbishment works in general. Therefore the assessment will involve looking into areas that will be impacted by the project activities and recovery status. These will include construction camp, borrow pits for construction materials such as aggregates, sand pits, water sources, access roads for delivering construction materials to site, socio-economic impacts and other related impacts such as those emanating from social interactions such as sexually transmitted diseases, to name a few.

2.7.4 Institutional boundaries

The institutional boundaries refer to those administrative and institutional boundaries in which the project lies and interacts. These can be determined from the legislations, ministries/departmental mandates. The project area is in the Dodoma municipality within Dodoma region. Within the municipality there are various divisions, wards and administrative sub wards commonly known as "mitaa". There is a long chain of authority in the local government, with three intermediate levels between the Regional Administrative levels to the sub-ward chairman. Each administrative unit is governed by its own council, responsible for environmental measures. Besides there is an institution in Dodoma dealing with Capital Development. This is an autonomous body dealing with developments in the Dodoma. Therefore starting from the Ministry of Finance where the project proponent falls, then comes regional secretariat down and other intermediate structures to sub ward level. The project proponent will need to interact with all the institutions from the national level to regional level down to municipality, divisions, wards and sub-wards "mtaa" administrative levels.

When it comes to fulfilment of other legal obligations there are institutional frameworks, including Vice President's office which houses with the following hierarchies:

- Minister of Environment responsible for issuing the Environmental Clearance Certificate for the project to be implemented.

- Division of Environment (DOE), which coordinates environmental management activities like coordination of environmental policy and advises the minister on issuing environmental clearance or EIA approvals.
- National Environment Management Council (NEMC), which is responsible for coordinating the Environmental Impact Assessments, Monitoring and Auditing.

3. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

3.1 Overview

Relevant legislations pertaining to environmental quality, health and safety, pollution of ground and surface water, pollution of soil, land and land use control, forests, wildlife, protection of sensitive areas, protection of endangered species among others, were examined in order to ensure that the proposed new office building project meets and abides by the existing regulations. In this section, a full analysis of different policies, legal and administrative frameworks and relevant international treaties and conventions ratified by the country and as they apply to this project are discussed.

3.2 Environmental Related Policies

The National Environmental Policy, NEP (1997), highlights sustainable development as its core concept. NEP states that Tanzania is committed to sustainable development in the short, medium and long-term.

National Land Policy (1995) promotes a secure land tenure system to encourage the optimal use of land resources, and to facilitate broad-based social and economic development.

In recognizing that land has value and can facilitate access to capital, the government has instituted a land policy that supports responsible use, allocation, ownership or leasehold, management and land administration. The land policy supports investments in agriculture and industrial development. Also in line with the land policy the government is giving priority consideration to the needs of entrepreneurs to access suitably located, well-priced land for industrial purposes and other uses.

National Forest Policy (1998) demarcates and reserves in perpetuity for the benefit of the present and future inhabitants, sufficient forested land and land capable of afforestation, to ensure environmental stability and maintenance of the ecological balance including atmosphere equilibrium which is vital for sustenance of all life forms, human, animal and plant.
The proposed project may use timber for some of its activities like planking, scaffolding and formwork. Since there are alternatives for timber usage the project will strive to go for these alternative means and avoid use of timber to safeguard the forests.

Water Policy (2002)
The water policy (NAWAPO 2002) addresses adequately all relevant issues on integrated water resources management and adopts comprehensive policy framework and the treatment of water as both a social and economic good. Water policy issues particularly in water conservation, water quality management and pollution control underscores pollution of water sources from increasing discharge of untreated and partially treated municipal and industrial wastewater. The main objective is to set principles and procedures for managing the quality and conservation of water resources as well as improve and protect the ecological systems and wetlands. This could lead to serious pollution of water sources and thus ecosystems and biodiversity and may seriously affect health of people and animals. Therefore, implementation of a new NBS office building project will follow the established rules and guidelines under the national water policy.

The objectives of the proposed project are consistent with the objectives of the water policy on cleaner production practices, effective and efficient utilization of water, water conservation, and application of environmentally friendly activities to minimize pollution of water sources. During construction and operation of the project, NBS will have all procedures in place to observe the requirements of the National Water Policy 2002.

Cultural Policy (1997)

This policy covers a wide range of topics relating to both living cultural heritage and historical and archaeological remains ("cultural property"). The policy requires that "all land development shall be preceded by Cultural Resource Impact Studies". NBS will follow the requirements of this policy by sensitizing its Contractors and their employees to observe any cultural properties that may be encountered during site during excavation of trenches for foundations.

National Investment Promotion Policy, 1996

In an effort to further improve the investment climate in Tanzania, the Government reviewed the Tanzania Investment Promotion Policy of February 1990 into a new Investment Policy which was approved in October 1996.

The Policy underlines the following:

- Maximum mobilization and utilization of domestic capacity including cooperation with other developing countries as well as industrialized countries
- Maximum promotion of exports of goods and services to enhance the development of a dynamic and competitive export sector. The encouragement of inflows of external resources to complement national efforts
- Encouragement and facilitation of the adoption of new technologies in activities that especially have a direct bearing on productivity, quality and increased competitiveness
- Enhancement of transparent legal framework that facilitates the promotion and protection of all investments
- Deregulation of the investment approval process
- Re-defines the role of the private sector and puts it into a more central role
- Creates a balance between administrative controls and market forces as a means of allocating resources
- Re-emphasize political pluralism to enhance democracy
- Rededicates the nation's adherence to Rule of Law

National investment climate requires some reference data that is made under the National Bureau of Statistics. Therefore the project proponent will ob serve the requirement of this policy for the success of investment ventures.

National Human Settlement Development Policy 2000

The policy notes that the rapid urbanization rate is transforming the country's settlements patterns from small villages to that of large villages, towns and municipalities. At the same time, the delivery of shelter in urban areas of Tanzania is inadequate and lacking infrastructure and services leading to non-sanitary situations threatening health and productivity of its citizens. In view of this the policy aims at harnessing existing initiatives in shelter delivery and infrastructure investment by various actors in the public, private, informal and community sectors as well as guide to the rapid urban growth and the transformation of the settlement patterns.

Hopefully it is from this situation that the proponent of this project decided to construct this modern building to cope with the pace of urban growth and transformation of the office buildings pattern.

Construction Industry Policy, 2003

The policy observes that the construction industry is a fundamental economic sector which permeates most of the other sectors as it transforms various resources into constructed physical economic and social infrastructure necessary for socio-economic development.

The Construction Industry Policy aims at creating an enabling environment for the development of a vibrant, efficient and sustainable local industry that meets the demand for its services to support sustainable economic and social development objectives.

Under item 8.1.2 (a) the construction industry policy observes that for the attainment of the long-term development Vision 2025 for Tanzania, demands for accelerated infrastructure development is required. This in turn places an onus on public sector delivery agencies to perform beyond current capacity. Thus, rapid development of the capacity is required to ensure effective management of the delivery process in a way that creates an enabling environment for the performance improvement of the industry and value for money of the constructed facilities.

It is along these same lines that NBS feel that they have a role to play into contributing into a modern building facility which aims at improving their services in the country.

National Health Policy 2003

The overall objectives of the 1990 National Health Policy was to improve the health and wellbeing of all Tanzanians, with a focus on those most at risk and to encourage the health system to be more responsive to the needs of the people. The new 2003 National Health Policy links up with the Government Development Vision and expands on the scope of the health sector policy to include new aspects of human health. Therefore, the proponent together with his contractor will observe and comply with the requirements of the National Health Policy throughout the project life cycle.

The National Policy on HIV/AIDs-September 2001

This is a policy which provides the framework, direction and general principles in the national response interventions in the prevention, care and support of those infected and affected by the epidemic and mitigation of its impacts. The specific objectives of the policy are;

- Prevention of transmission of HIV/AIDs
- HIV/AIDs testing through voluntary testing with pre-and-post test counselling
- Care for people living with HIV/AIDs (PLHAs)
- To strengthen the role of all the sectors, public, private, NGOs, faith groups, PLHAs,
  CBOs and other specific groups to ensure that all stake holders are actively involved in
  HIV/AIDS work and to provide a framework for coordination and collaboration
- Research on HIV/AIDs
- To create legal framework by enacting a law on HIV/AIDS with a view to establishing multi-sectoral response to HIV/AIDS and to address legal and ethical issues in HIV/AIDS and to revise the legal situation of families affected

by HIV/AIDS in order to give them access to family property after the death of their parent(s).

- Other objectives include
  - To monitor the efforts towards community mobilization for living positively with
    HIV/AIDS in order to cope with the impact of the epidemic while safeguarding the rights of those infected or affected directly by HIV/AIDS in the community.
  - To identify human rights abuses in HIV/AIDS and to protect PLHAs and everyone else in society against all forms of discrimination and social injustice.
  - To provide appropriate effective treatment for opportunistic infections at all levels of the health care system
  - To work closely with the Ministry of Home Affairs, NGOs and Faith Groups in the fight against drug substance abuse that increases the risk of HIV transmission
  - To prohibit misleading advertisements of drugs and other products for HIV/AIDS prevention, treatment and care

In order to contribute towards observing the objectives of the National Policy on HIV/AIDs, the project proponent through the contractor of the new office building will have HIV/AIDs programme aimed at promoting awareness of HIV/AIDs among its project service providers, its employees and immediate neighbours.

The National Employment Policy 1997

The policy aims at

- Preparing the conducive environment for the unemployed to employ themselves by directing more resources to the self employment sectors,
- Identifying potential areas for employment and to lay down strategies of how to utilize such areas in promoting employment in the country,
- To prepare a special procedure for coordination and developing sources of employment including creation of a body that will supervise implementation of the employment policy,
- Identify and elaborate on the status and roles of various stakeholders in promoting and sustaining employment.
- To strengthen (through removal of bottlenecks the relationship between formal sector and that of self employment.
- To develop the self employment sector in rural areas so as to reduce the rate of migration to urban areas ,
- To ensure that activities initiated on self employment act as a basis for development of the economy and are an inspiration for the culture of self reliance, etc

In view of the Government efforts in development of National Employment Policy, NBS through her contractors intends to supplement these efforts by providing some few employments during project construction and also during project operation. During this period some transfer of technology can be attained among those who will be employed and after their contract terms they can engage in self employment activities in the informal sector with abundant wealth which has not been exploited significantly.

Women and Gender Development Policy (2000)

The Women and Gender Development policy's overall objective is to promote gender equality and equal participation of men and women in economic, cultural and political matters. Also focuses on fairer opportunities for women and men and access to education, child care, employment and decision making.

3.3 Relevant Laws, Regulations and Guidelines

3.3.1 Those dealing with Environment or relate to EIA

The Environmental Management Act Cap 191 (EMA No. 20 of 2004)

The administrative and institutional arrangements for environmental management for all sectors in Tanzania are stipulated in the Environmental Management Act Cap 191 (No. 20 of 2004). EMA Cap 191 gives National Environment Management Council (NEMC) the overall responsibility for undertaking the enforcement, compliance, review and monitoring of Environmental Impact Assessment and in this regard facilitates public participation in environmental decision-making. NEMC is responsible for screening and reviewing investments and projects at the national level and other levels whenever needed.

Part VI of the act under clause 81 presents the obligation of the project proponents or any developer of project to undertake the environmental impact assessment and obtain an environmental impact assessment certificate. In total observance of this requirement, NBS has initiated the process and submission of this statement is in line with all such requirements.

Environmental Impact Assessment and Audit Regulation of 2005

These regulations were prepared under EMA 2004 and require developers to conduct an Environmental Impact Assessment for any project likely to have negative impacts on the environment. Application for an Environmental Impact Assessment certificate is necessary for any such project. The Proponent is in total observance of this requirement through facilitating carrying out of this environmental and social impacts assessment.

3.3.2 Acts Dealing with Land Use Planning

Land Act No. 4 of 1999

The Land Act No. 4 of 1999 establishes three categories of land: general, village and reserved. In addition, land may be declared 'hazard land' where its development might lead to environmental damage, e.g. locations such as wetlands, mangrove swamps and coral reefs, steep lands, land within sixty (60) meters of a river bank, shoreline of an-inland lake, beach or coast and other areas of environmental significance or fragility. The act recognizes that a person or a group of persons, whether formed into a corporate body -under the Companies Ordinance or otherwise who is or are non-citizens, including a corporate body the majority of whose shareholders or owners are non-citizens may only obtain a right of occupancy or derivative right for purposes of investment prescribed under the Tanzania Investment Act, 1997. In respect to this Act, the proposed project is meant for government offices and the project proponent, NBS, will observe all the requirements of this Act.

The Land (Forms) Regulation 2001

The Land Regulations were made under the section 179 of the Land Act No. 4 of 1999 and provide all specific forms required for Management and Administration, Granted Right of Occupancy, Mortgage, Lease, Easement, Co-occupancy and others, including compensation forms (Forms 69 and 70). These requirements are all observed by the proponent. Fortunately the land regarded as Plot No. 8 in Block "A" now belongs to the project proponent NBS as supported by CDA's letter of offer ref. no. CDA/ED/LA-15/67638/2 dated 5th August 2016.

The Land Acquisition Act, Cap.118, R.E.2002

The land acquisition act requires the minister responsible for land to pay compensation as may be agreed upon or determined in accordance with the provisions of the Act. The Act stipulates that no compensation shall be awarded in respect of land, which is vacant ground, or to be limited to the value of the un-exhausted improvement of the land, in case the development of the land is deemed in adequate.

The acquisition of the land for the public use as well as for the resettlement sites is within the provision of this Act. Further the Act specifies other requirements prior to the acquisition of the land such as investigation for the land to be taken, issuing notice of intention to take land and mode in which notices will be served. It further defines the requirements for and restrictions on compensation. The project proponent is now a legal occupier of the land regarded at Plot 8 Block A. The land was acquired by CDA and reserved for government offices. There might be some discussions with those who were cultivating in the area to resolve what is regarded as cost of taking care of the plot to prevent overgrowth of vegetation. This is however different from Land Acquisition and will be treated as an amicable resolve of the issue through hand shake"

The Urban Planning Act No. 8 of 2007

The Act provides for the orderly and sustainable development of land in urban areas to preserve and improve amenities. It also provides for the grants of consent to develop land and powers of control over the use of land and to provide for other related matters. Section 4.1 of the urban planning Act, 2007, identifies the objectives of urban planning to which all persons and authorities exercising powers under, applying or interpreting this act shall be to:

- facilitate efficient and orderly management of land use;
- empower landholders and users, to make better and more productive use of their land;
- promote sustainable land use practices;
- ensure security and equity in access to land resources;
- ensure public participation in the preparation and implementation of land use policies and plans;
- facilitate the establishment of a framework for prevention of land use conflicts;
- facilitate overall macro-level planning while taking into account regional and sectoral considerations;
- provide for inter-sectoral co-ordination at all levels;
- ensure the use of political and administrative structures and resources available at national, regional, district and village levels; and

- Provide a framework for the incorporation of such relevant principles contained in the national and structural policies as may, from time to time, be defined by the government.

The activities of the project are observing the requirements of land use planning and will abide to all such other development as it may be guided from time to time by CDA during the course of the project development.

3.3.3 Acts and Regulations to Safeguard Natural Resources

The Antiquities Act Cap 333 of 2002

The Antiquities Act Cap 333 of 2002 repelled earlier Acts of 1964 and the amendments made in 1979. These had replaced the Colonial Monuments Preservation Ordinance and the Monuments (Preservation) Ordinance promulgated in 1937 is the basic legislation for protection and preservation of the countries' cultural heritage. Under the law the following categories of cultural properties are recognised and protected: relics, monuments and other objects.

In this case a monument is defined as any building, fortification, internment, madden, dam or structure erected, formed, or built by human agency before the year 1863, or the ruins or remains thereof, or any rock painting or carving, or any natural object painted, incised, modified or erected in Tanzania by human agency before the year 1863 or any earthwork, trench, well, road, or any modification of the soil or rock, dug, excavated or otherwise engineered by human agency before the year 1863. NBS will observe the requirements of this law during execution of the project in its new site in Dodoma

Protected Public Places and Recreation Areas Act No 38. 1969

This Act was created to provide a process and mechanism for protecting specific lands as is deemed necessary at the discretion of the Minister. The Act provides for imprisonment and fines for persons unlawfully trespassing on such protected land areas. The project proponent, NBS is aware that the current land earmarked for proposed project is a public place in the sense of constructing government offices and not a protected area.

Forest Act No. 14 of 2002

The Forest Act, No. 14 of 2002 requires that for any development including mining development, construction of dams, power stations, electrical or telecommunication and construction of building within a Forest Reserve, Private Forest or Sensitive Forest, the proponent must prepare an Environmental Impact Assessment for submission to the Director of Forestry. The law also requires licenses or permits for certain activities undertaken within the national or local forest reserves, such as, among others, felling or removing trees, harvesting forest produce, entering a forest reserve for the purpose of tourism or camping, mining activities, occupation or residence within the reserve, cultivation, erecting any structures. The proposed site for the project is neither within nor near any forest reserve. However, the requirements of this Act will be taken into consideration regarding few trees noted in the proposed project site. Also alternative means of using steel elements for formwork, scaffolding, and planks will be adopted in place of timber as a contribution towards saving forests by not using forest products.

The Mining Act No. 14 of 2010.

This act provides for prospecting of minerals, mining and dealing in minerals. It also provides for building materials including all forms of rock, stones, gravel, sand, clay,

volcanic ash or cinder or other minerals being used for the construction of buildings, roads, dams, and aerodromes or similar works. The Legislation makes EIA mandatory as a precondition for granting various categories of mining licenses. In this NBS building project, construction materials which include rocks, stones, gravel and sand will be mined from existing borrow areas operated by those having mining Licenses issued by the Ministry of Energy and Minerals. All requirements of the Act will be met parallel to other development projects in Dodoma

The Water Resources Management Act No. 11 of 2009

Water legislation has been updated to bring it in line with the National Water Policy 2002. This current Water Resources Management Act No. 11 of 2009 provides for institutional and legal framework for sustainable management and development of water resources; outlines principles for water resources management; provides for the preventions and control of water pollution; provides for participation of stakeholders and the general public in implementation of the National Water Policy; repeals the Water Utilization (Control and Regulation) Act, 1974 and vests all water in the country to the Government of United Republic of Tanzania and sets procedures and regulations for the extraction of water resources.

The Act also contains two schedules, which set standards for receiving waters and effluent. It is anticipated that the NBS building project will use water from public water supply system, use it for project activities and later discharge the wastewater into oil interceptor and other treatment facilities to be located within the earmarked project area. Otherwise wastewater without any unwanted matter will be linked to the central sewerage system draining to Swaswa Area, north-east of Dodoma Town.

Water Supply and Sanitation Act No. 9 of 2009

The Water Supply and Sanitation Act No. 9 of 2009 has been enacted to provide for sustainable management and adequate operation and transparent regulation of water supply and sanitation services with a view to give effect to the National Water Policy (2002). It further provides for the establishment of water supply and sanitation authorities as well as community owned water supply organizations. Apart from NBS project using water from public water supply system for its activities, but it will ensure that the issue of sanitation is considered in all phases of the project.

The Environment Management (Water Quality Standards) Regulations, 2007

These regulations were made under section 143, 144, and 230(2) (s) of the EMA Cap191 with the following objectives

a. protect human health and conservation of the environment
b. enforce minimum water quality standards prescribed by the National Environment Standards Committee (NESC)
c. Enable NESC to determine water usages for the purposes of establishing environmental quality standards and values for each usage and
d. Ensure all discharges of pollutants take account the ability of the receiving waters to accommodate contaminants without detriment to the uses specified for the waters concerned

Under the first schedule, the regulations give the permissible limits for municipal and industrial effluents for both physical, inorganic organic and microbiological components. Since these limits are now readily available the project proponent will ensure that the

objectives of regulations are totally observed to safeguard the environment around the project area.

The Environment Management (Air quality Standards) 2007

These regulations were made under Sections 140, 145 and 230 (2) (s) of the Environmental Management Act Cap 191. The objectives of these Regulations were to:-

(a) set baseline parameters on air quality and emissions based on a number of practical considerations and acceptable limits;
(b) enforce minimum air quality standards prescribed by the National Environmental Standards Committee
(c) help developers such as industrialists to keep abreast with environmentally friendly technologies and
(d) ensure protection of human health and the environment from various sources of pollution

Under this project, the type emissions expected are from the standby generators in terms of NOx and SOx and possibly CO. Since these standards set permissible limits procurement of the equipment likely to be the source of emissions will be based on these regulations

Environmental Management (Soil Quality Standards) of 2007

These regulations were made under Sections 144, 145 and 230 (s) of the Environmental Management Act Cap 191, with the following objective;

a) set limits for soil contaminants in agriculture and habitat;
b) enforce minimum soil quality standards prescribed by the National Environmental Standards Committee;
c) prescribe measures designed to maintain, restore and enhance the sustainable productivity of the soil;
d) prescribe minimum soil quality standards to maintain restore and enhance the inherent productivity of the soil in the long term;
e) enforce minimum soil standards prescribed by the National Environmental Standards Committee for such purposes as agricultural practices;
f) ensure implementation of criteria and procedures prescribed by the National Environmental Standards Committee for the measurement and determination of soil quality; and
g) prescribe measures and guidelines for soil management,
h) Ensure compliance with any such measures and guidelines for soil management that may be prescribed by the Minister.

All in all, the project is not going to deal with agricultural practices, it will only involve erection of the office building that will be dealing with the national records such as those of census, financial and economic records etc. During construction of the office building contaminants will be avoided to keep the soil free for other uses.

The Environmental Management Quality Standards (Control of Noise and Vibration Pollution) regulations, 2010

Also these regulations were made under sections 140, 147 and 230(2)(s) of the Environmental Management Act Cap 191. The objectives were to achieve the following;

a) ensure the maintenance of a healthy environment for all the people in Mainland Tanzania, the tranquility of their surrounding and their psychological well being by regulating noise and vibration levels
b) prescribing the maximum permissible noise and vibration levels from a facility or activity to which a person may be exposed
c) providing for the control of noise and vibration and for mitigating measures for the reduction of noise and vibration
d) set baseline parameters on noise and vibration permissible levels based on a number of practical considerations and acceptable limits
e) enforce minimum noise and vibration limits prescribed by the National Environmental Standards Committee
f) help developers such as industrialists to keep abreast with environmentally friendly technologies; and
g) ensure protection of human health and the environment from various sources of noise and vibration pollution

Construction of the office building will lead to some noise and vibrations. Also during operations noise and vibrations are expected from the generators. These parameters can be higher or within the allowable limits. Efforts will be made to ensure that the mitigation actions are put in place to attain the set limits.

3.3.4 Acts Dealing with Trade and Professional Ethics / Conduct

The Architects and Quantity Surveyors Act No. 16 of 1997 R.E. 2002

This act provides for establishment of the Board of Architects and Quantity Surveyors responsible for registering and regulating the conduct of the Architects, Quantity Surveyors and Architectural and Quantity Surveyors Consulting Firms. The new NBS office building will observe all requirements of this act and is ready to assist the board during inspections of the project works.

The Engineers Registration Act No. 15 of 1997 Revised Edition of 2002

This is an act which formed the Engineers Registration Board, a statutory body with the responsibility of monitoring and regulating engineering activities and the conduct of engineers and engineering consulting firms in Tanzania through registration of engineers and engineering consulting firms. Under the law, it is illegal for an engineer or an engineering firm to practice Engineering profession if not registered with the board. The board has also been given legal powers and has the obligation to withdraw the right to practice from registered engineers if found guilty of professional misconduct or professional incompetence.

Registration with the board is, thus, a licence to practice engineering in Tanzania. New NBS office building project is an engineering assignment and the project proponent is observing all the requirement of this Act through engaging the services of personnel and firms that are registered by Engineers Registration Board.

The Contractors Registration Act No. 17 of 1997 R.E. 2002

This is an act which provides for registration of contractors and also establishment of the Contractors Registration Board responsible for regulating the conduct of contractors in Tanzania. The project proponent will equally abide by all requirements of this Act in terms of supporting the activities of the board during inspection of any site for construction, installation, erection or alteration works for the purpose of verifying and ensuring that the works are being undertaken by registered contractors; and that the works comply with all governing regulations and laws of the country.

The Occupational Health and Safety Act No. 5 of 2003

This act sets provisions for the safety, health and welfare of persons at work in factories and other places of work. It is also meant to provide for the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with activities of persons at work; and to provide for connected matters. The new NBS building project will eventually be a place of work to be registered as per OSHA regulations governing the places of work and observe all safety and health practices at work sites by its consultants, contractors and sub-contractors.

Employment and Labour Relations Act No. 06 of 2004

This Act provides for fundamental labour rights and protection to ensure that there is no child labour, no forced labour, no discrimination and employees' and employer's rights to freedom of association. The Act also sets basic employment standards including conditions on the hours of work, remuneration, leave and unfair termination of employment and other forms of termination. The Act presents framework for collective bargaining and modes of prevention and settlement of disputes. The Project Proponent is currently having a functional office in Dar es Salaam observing all employment and labour relations requirements as stipulated in this Act. The Proponent will also ensure that the contractors engaged in the project development in Dodoma observe the requirements of the Act.

The Worker's Compensation Act No. 20 of 2008

This is an act that provides for compensation to employees for disablement or death caused by or resulting from injuries or diseases sustained or constracted in the course of employment. The act also establishes the fund for administration and regulation of workers compensation and also provides for related matters. In recognition of the requirement of Act, the project proponent shall register with the Director General of the Workers Compensation Fund as required by clause 71 and keep records of employees as set under clause 72 of the Act. The project proponent will display a statement of employee's rights under the Act in the prescribed manner including at the place of work and where it can be read by employees. The proponent will notify any employee injured in an accident or who will contract occupational disease of his rights and the procedures to be followed in order to claim compensation in case of an injury.

The Township (Building) Rules CAP 101- Supp. 59 of 1960

The rules numbered 4 to 60 cover important aspects including permits where by application prior to erection of building is mandatory. The rules also cover special provisions with respect to reinforced concrete details, rat prevention, technical details, walls, beams and loads, use of buildings, roof, chimneys, spacing ventilation and access, drainage including wastewater pipes and channels, water closets and latrines, traps and cesspits, exemptions, native buildings and lastly some penalty clauses. All of the above elements have a significant bearing on the new NBS office building project and will be observed fully for the success of the project.

The Energy and Water Utilities Regulatory Authority Act No. 11 of 2001

This is an Act that established a Regulatory Authority (EWURA) in relation to energy and water utilities and was meant to provide for its operational activities covering regulated sector including one or more of the following -

a) Electricity;
b) Petroleum and natural gas pipeline transmission and natural gas distribution;
c) Distribution of water and sewerage;

The act gives the functions of EWURA to include

(a) promoting effective competition and economic efficiency;
(b) protecting the interests of consumers;
(c) protecting the financial viability of efficient suppliers;
(d) promoting the availability of regulated services to all consumers including low income, rural and disadvantaged consumers;
(e) enhancing public knowledge, awareness and understanding of the regulated sectors including-
    (i) the rights and obligations of consumers and regulated suppliers;
    (ii) the ways in which complaints and disputes may be initiated and resolved; and
    (iii) The duties, functions and activities of the Authority.
(f) Taking into account the need to protect and preserve the environment.

Since the project is envisaged to involve water and energy in its daily activities, subsequent requirements of this Act are being observed.

The Fire and Rescue Force Act No. 14 of 2007 (Cap. 427)

This is the Act which established the National Fire Brigade for mainland Tanzania whose general duties were to prevent and minimize death rates, injury to the people and damage to the properties arising from fire, floods, earthquake, road traffic accidents and other disasters. Among other functions of the Force, the important function which fit in with the nature of the project at hand is to give guidance and assistance in the re-enforcement of fire equipment and facilities. Under this function NBS will cooperate fully with the National Fire Brigade to ensure that all the requirements and regulations are observed and met during implementation and operation of the project.

3.3.5 Acts with a Bearing on Environment at the District Level

Local Government Laws: Local Government (District Authorities) Act, Cap.287 R.E.2002 and Local Government Urban Authorities) Act, Cap.288 R.E 2002

Two separate pieces of legislation regulate local government authorities and governance in Tanzania. These are Local Government (District Authorities) Act, Cap.287 R.E.2002 and Local Government Urban Authorities) Act, Cap.288 R.E 2002. Tanzania is implementing the Local Government Reform Programme (which has instituted "Decentralization by Devolution". District and Urban councils have extensive powers under the two acts, both in governance aspects and in the management of natural resources and land in their respective jurisdictions. The administrative aspects of valuation and payment of compensation are assigned to local government authorities and regional administration. Therefore if there are areas in Dodoma where land or assets valuation is required, the respective local government authorities will be closely involved under the directive of the Capital Development Authority.

Local Government (District Authorities) Act Cap 288

The Act provides for; inter alia, the establishment, composition, functions and legislative powers of district, township councils and village authorities.

At the village level, the government structure is comprised of a village assembly consisting of all persons aged 18 and above. There are also village committees covering such matters as planning, finance, economic affairs, social services, security, forest protection, water resources, etc.

The village council's functions and roles include planning and coordinating activities, rendering assistance and advice to the villagers engaged in agriculture, forestry, horticultural,

industrial or any other activity, and to encourage village residents to undertake and participate in communal enterprises. As an administrative subdivision between the village and the district, the ward reviews the proposed village council's projects in its jurisdiction and approves them for passage up the line to the District Development Committee.

Local Government (District) Authorities Cap 288 establishes the Ward Development Committee (hereinafter referred to as "WDC). The WDC is responsible for developing general development plans for the ward. Further, the WDC must manage disasters and environmental related activities within its ward.

Local Government (District) Authorities) Act Cap 288 also provides for the protection and management of the environment on the part of the district council. This is deduced from section 111 of the Act, which promotes social welfare and economic well being of all residents within its area of jurisdiction.

Protection and management of the environment is further provided for under section 118 of Act. District councils are required to take the necessary measures to control soil erosion and desertification; to regulate the use of poisonous and noxious plants, drugs or poison; regulate and control the number of livestock; maintain forests; manage wildlife; ensure public health; provide effective solid and liquid waste management protect open spaces and parks etc. The Act also has provisions for a scheduled timetable and management of the environment. Since the gas fired combined cycle power generation project will be touching the areas where the local government authorities have roles to play, the project partners will work hand in hand with the local government structures for the success of the project.

3.4 Other Relevant International Treaties and Conventions

Tanzania has ratified a number of Multilateral Environmental Agreements (MEAs) and consequently has duties under those agreements. In this new NBS office building project, the most relevant treaties and/or conventions are given in Table 8 below.

Table 8: Multilateral Environmental Agreements (MEAs) (Treaties and Conventions to which Tanzania is a party to

Type of Convention	Name of Convention	Relevance to the Project **
1.Pollution Prevention Conventions	1. The convention on the prevention of Marine Pollution by dumping of Wastes and other wastes, London, (1972) 2. United Nations convention on the Law of the sea, Montego Bay, (1982)	The project operations will involve generation of liquid and solid wastes during construction and operation of the office building. The wastes will be disposed off at the respective sites after they have been passed to be disposed off together with other Dodoma Municipal wastes
2.Bio diversity related Conventions	1. Convention of Biological Diversity, (1992) ratified by Tanzania in 1996). 2. Convention to combat, desertification, in particular Africa, Paris 1994	Project activities involve clearing of vegetation from the area for contractors' camps, main building, and other necessary infrastructures such as electricity reticulation and water and sewerage conveyance lines. Vegetation clearance should be confined on only necessary areas to avoid disturbance to

	3. The Cartagena Protocol on Bio safety to the convention on Biological Diversity (2000)	biodiversity. The project will also work with the respective communities in conservation of available flora and fauna.
Other Conventions	1. The convention on International Trade and Endangered species of Wild Fauna and Flora (CITES), Washington (1973) 2. The convention concerning the Protection of World Cultural and Natural Heritage, Paris, (1972) 3. The convention of Wetlands of International Importance especially as water fowl Habitat (The Ramsar Convention) (1971) ratified by Tanzania in 1998).	During project operations, if endangered flora and fauna species are encountered, the project staff and the Contractors staff will in no event involve themselves in trade of these species
Climatic change Conventions	1. The United Nations Framework convention on climatic change (1992)	The project will not use green house gases and if they happen to be there in the cooling facilities such gases will not be allowed to leak into the atmosphere through regular maintenance of the project facilities
	2. Kyoto Protocol (1997)	
Chemicals and Ozone Protection Conventions	1. Basel convention on the control of Trans boundary movements of Hazardous Waste and their Disposal, 1989 2. Rotterdam convention on prior Informed Consent Procedure 3. Stockholm Convention on Persistent Organic Pollutants 4. Vienna Convention on protection of Ozone Layer	All the wastes generated at the project sites will never be moved beyond Tanzania boundaries. Disposal will be done in Tanzania and disposal permits if required will be sought from the respective ministries The dangers associated with air pollution from projects may be reduced by means of improved technological solutions, better routines of operations and maintenance and knowledge through competence and know-how.
	5. The Montreal protocol on substances that deplete the ozone layer, Montreal, 1987 6. Protocol on Liability and compensation on Damage resulting from Trans boundary movement of Hazardous waste and their disposal, 2000	The cooling facilities to be used by the project will have to avoid where not compulsory using CFC's for cooling.

Regional conventions	1. The Convention on the conservation of Nature and Natural Resources, 1968 Algiers, (1968)	
	2. The Bamako convention on the Ban of the import into Africa and the control of Trans boundary movement of Hazardous Wastes within Africa, 1990	Any importations of chemicals during construction and operation of the project will follow national legislations on the Industrial and consumer chemicals(Management and Control Act No. 3 of 2003
	3. Nairobi Convention for the protection, management and development of the Marine and Coastal environment of Eastern African Region, 1985 and the related protocols.	
	4. Lusaka Agreement on cooperative enforcement operations Directed at illegal Trade in Wild Fauna and Flora (1994)	The project operations are likely to encounter area with endangered flora and fauna species. The project staff and the Contractors staff will in no event involve themselves with trade of these species

3.5 The World Bank's Safeguard Policies

The World Bank has keen interest in protection of the environment, for investment projects they support, in line with its safeguards policies. These WB policies provide guidelines, aimed at preventing and mitigating undue harm to people and the environment, when implementing development projects. These safeguard policies provide a platform for the participation of stakeholders in project design and implementation. The World Bank policy relevant to this project is:

- Environmental Assessment (OP/BP 4.01)

The triggered operational policy of the World Bank is further presented below;

3.5.1 OP/BP 4.01 Environmental Assessment Policy

The objective of this policy is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and of their likely environmental impacts. This policy is triggered if a project is likely to have potential (adverse) environmental risks and impacts on its area of influence. OP 4.01 covers impacts on the natural environment (air, water and land); human health and safety; physical cultural resources; and trans-boundary and global environment concerns.

Depending on the project, and nature of impacts a range of instruments can be used: EIA, environmental audit, hazard or risk assessment and environmental management plan (EMP). When a project is likely to have sectoral or regional impacts, sectoral or regional EIA is required. The Borrower is responsible for carrying out the EIA.

Under this new office building project, the proponent M/s NBS has facilitated the undertaking of Environmental and Social Impact Assessment to assess the social and environmental impacts of the project.

The important aspect about this project is that it will not involve any land acquisition as stated in this ESIA report. Also, there is no party or entity besides, the NBS, who have competing interest in the land parcel under consideration. The land on which the office building will be erected was allocated by the Capital Development Authority to NBS through CDA's letter of offer ref. no. CDA/ED/LA-15/67638/2 dated 5th August 2016. The letter of offer (presented in Swahili language) is attached as appendix A.8 on page 140 of 185 of this ESIA report. The legal land ownership document (certificate of occupancy) of the project area is being processed after completion of the application formalities which involve payment of necessary application fees together submission of project drawings for construction permit.

3.6 Environmental, Health and Safety Guidelines (EHSG)

The EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice. These EHS Guidelines contain the performance levels and measures that are normally acceptable to World Bank and that are generally considered to be achievable in new facilities at reasonable costs by existing technology. For WB-financed projects, application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets with an appropriate timetable for achieving them. This environmental assessment report recommends alternative levels or measures, which are project- or site-specific requirements.

The expected impacts of the project during different phases of the project have been identified under Chapter 6, the mitigation actions and measures to enhance positive impacts have been presented under Chapter 7. Management and Monitoring plans for the mitigation of impacts have been presented under Chapter 8 and Chapter 9 resepctively.

This section summarizes the environmental performance standards and guidelines applicable to the proposed project.

Table 9: Summary of Environmental Health and Safety Guidelines

Assessment and Management of Environmental and Social Risks and Impacts		
Theme	**Criteria**	**Target**
Environmental and Social Assessment	1. Does NBS have a process to assess the environmental and social impacts and risks of the project? Please describe your activity's area of influence; as well as the role and capacity of third parties, if applicable. 2. Have disadvantaged or vulnerable groups been identified? If so, do any adverse impacts fall disproportionately on them?	1. Yes NBS do have the process in place and it is according to the requirements of the Tanzanian Environment Management Act No. 20 of 2004 that any project to be implemented must be subjected to the Environmental and Social Impacts Assessment 2. Yes, in the project areas these groups are normally identified and these include elderly, women and children and disabled in the area NBS looks for means of assisting these

		vulnerable groups including linking them to local NGOs involved in helping such groups
Management Program	1. Does the NBS have a program(s) of mitigation and performance measures that addresses identified impacts and risks? 2. Has/will an appropriate Action Plan document(s) been/be prepared and disclosed to affected communities?	1. Yes, NBS have such programs through environmental and social impacts which are normally carried out as part of project routine to get the clearance from local bodies such as the National Environment Management Council (NEMC) 2. Yes, Environmental and Social Management Plans are normally prepared as part of the Environmental and Social Impacts Assessment and disclosed to affected communities. Case in point is this construction of the new NBS 5 storey building office
Organization	1. Are responsibilities and authorities for implementation of the management program defined and communicated appropriately through the NBS's organization?	1. Yes they are as there are personnel employed by NBS to deal with responsibilities associated with management programs
Training	1. Has the NBS identified the training needs for those persons with responsibility for implementing the management program?	1. Yes the training needs are normally identified and so far HSE officer and CLO will be recruited to deal with Environmental Management Matters during implementation of the project
Community Engagement	1. Has the NBS established a community engagement process for affected communities? a) Has/will appropriate disclosure of assessment information to, and consultation with, affected communities been/be conducted in a timely and culturally appropriate manner? b) Has the process ensured, or will it ensure free, prior and informed consultation of the affected community, if applicable? c) Is there a procedure for receiving and facilitating resolution of affected communities concerns and grievances regarding	1. Yes there is a Community Liaison Officer (CLO) employed for these community related issues a) Yes, the EIA conducted recently for the project involved consultation of the communities to be affected and disclosed all information associated with the project and communities participated in giving mitigation actions b) Yes, the process involved open consultation where the minutes were prepared, attendance register made and pictures of attendance were taken for records c) Yes, there are grievances mechanisms in place to facilitate resolution of problems from affected communities

	environmental and social performance?	
Monitoring	1. Has the NBS established procedures to monitor and measure on a regular basis the key characteristics and performance of the management program, including the use external experts where appropriate?	1. Yes, monitoring procedures are in place according to Environmental and Social Monitoring plans prepared as part of Environmental Assessments for the project
Reporting	1. Is appropriate environmental and social performance information periodically reported internally to senior management? 2. Is appropriate environmental and social performance information reported at least annually to Affected Communities?	1. Yes, the environmental and social performance information are reported as per NBS's Corporate Social and Environmental Responsibility which addresses NBS arrangements to address environmental issues, assessment and certification initiatives and employee training and information actions on environmental protection. 2. Yes the environmental and social performance information will be reported to likely to be affected community through regular meetings with the community leaders
Performance Standard 2 Labor and Working Conditions		
Theme	**Criteria**	
Human Resources Policy and Management	1. Does the NBS have an appropriate human resources policy that addresses all requirements of the performance standard and includes: a) Being readily accessible by employees? b) Being clear and understandable? c) Providing information on rights under national labor and employment law? 2. Has the NBS documented and communicated working conditions and terms of employment to all workers directly contracted? 3. Are the terms and conditions in accordance with: a) Any collective agreement (s)? b) National Law? 4. Has the NBS implemented a grievance mechanism to review and address employee complaints?	1. Instead of a human resource policy, NBS has Industrial Relations Procedures of the Corporate Social and Environmental Responsibility). These include procedures for employee information, consultation and negotiations 2. Yes these are part of the contract agreement signed with each employee during recruitment and employment 3. NBS operates in accordance with National Laws. 4. Yes NBS has a grievance mechanism to review and address employee's complaints

	a) Are all workers aware of the existence of a grievance mechanism? b) Is there a responsible person to review complaints and follow up on them in a timely and transparent manner?	a) All employees are aware of the existence of the Grievance Mechanism and all new employees are informed of the mechanism during recruitment b) Yes there is a responsible person Human Resource Officer / Office Manager who deals with complaints and follow ups
Worker's Organization	1. Does the NBS comply with national law in allowing workers to form and join workers organizations without retaliation or discrimination? 2. If national law substantially restricts workers organizations has the NBS provided alternative means for workers to express their grievances and protect their rights organizations without retaliation or discrimination?	1. Yes, NBS observes and allows workers to join the workers' organizations of their choice without any discrimination or retaliation 2. Since there is no national law that restricts workers' organization NBS has not gone into looking for an alternative means for workers
Non-Discrimination and Equal Opportunity	1. Does the NBS have documented transparent procedures, including recruitment, discipline, performance and grievance procedures, to ensure that employment decisions are not made on the basis of personal characteristics unrelated to job requirements?	1. Yes, NBS has the procedure for Equality of Treatment as per the Corporate Social and Environmental Responsibility. These include measures taken to promote gender equality, measures taken to encourage employment and integration of people with disabilities and anti –discrimination policy
Retrenchment	1. If the NBS anticipates retrenchment of a significant number of employees, have they: a) Developed a plan to implement the retrenchment and selected those who will be dismissed, based on non-discriminatory principles? b) Developed a plan to mitigate adverse impacts; and c) Have they consulted workers appropriately?	1) NBS is committed to full compliance with the non-discrimination principles as set out in Local Tanzanian Conditions on Labour Laws. Plans and Procedures are not developed yet as NBS is getting into new avenues where recruitment instead of retrenchment is taking place.
Protecting the Work Force	1. Does the NBS ensure child labor is not used directly, or through contractors or in the supply chain? a) Does the NBS check the ages of all employees? b) Does the NBS ensure that young workers (15-18 years) are not employed in dangerous work? c) Does the NBS ensure that	1. Yes, NBS observes promotion of and compliance with the international labour organization's fundamental Conventions. The company's general policy complies with the general principles on international law (ILO, EU Law) as well as national labour laws that exclude, in particular, all forms of discrimination, harassment, forced

	child labor is not used in their supply chain and do they commit contractors and suppliers to not use child labor?	labour and child labour as per Corporate Social and Environmental Responsibility of NBS
Occupational Health and Safety	1. Does the NBS provide its workers with a safe and healthy work environment? a) Has the NBS taken steps to prevent accidents, injury, and disease by minimizing the causes of hazards? b) Has the NBS trained workers in occupational health and safety? c) Does the NBS document and report on occupational accidents, diseases, and incidents? d) Does the NBS have an emergency prevention, preparedness and response arrangement?	1. Yes, and NBS has a Health and safety policy whereby NBS is committed to continuing to improve working conditions, preventing risks and reducing nuisances, by implementing a "Health and Safety, Security, Environment and Quality" management programme, which is based on industrial best practices, in compliance with national regulations as per NBS Corporate Social and Environmental responsibility

Performance Standard 3
Resource Efficiency and Pollution Prevention

Theme	Criteria	
Pollution Prevention, Resource Conservation and Energy Efficiency	1. Does the NBS apply project-specific pollution prevention and control and waste management techniques that are consistent with good international industry practice, such as those reflected in the EHS Guidelines? 2. If the NBS Activity has the potential for significant impacts to ambient conditions, have ambient considerations been taken into account and appropriate strategies to minimize impacts promoted?	1. Yes, NBS has Pollution of Waste Management Policy which has measures to prevent or remedy releases into the air, water and soil that seriously affect the environment, measures to prevent recycle and eliminate waste, and management of noise and other forms of pollution specific to an activity. 2. Yes NBS has Sustainable use of Resources Policy which includes water consumption and supply according to local restrictions, consumption of raw materials and measures taken to improve the efficiency of their use and energy consumption, measures taken to improve energy efficiency and use of

	3. Has the NBS's operations incorporated resource conservation and energy efficiency measures?	renewable energy. 3. Yes as per no 2 above
Wastes	1. Has a hierarchical approach of avoidance, minimization, recovery, reuse, and environmentally sound disposal been applied to the management of hazardous and non-hazardous wastes?	1. Yes, the approach on waste management is made according to the Pollution and Waste Management Policy and also according to the national standards provided.
Hazardous Materials	1. Does the NBS manage hazardous materials so as to avoid uncontrolled releases to the environment?	1. Yes, NBS manages hazardous wastes according to National Laws
Emergency Preparedness and Response	1. Does the NBS have emergency preparedness and response plans that are commensurate with the level of project risks?	1. Yes NBS has EPRPs which include for fire etc. Also NBS will ensure that its contractors for construction of the new office building have EPRP relevant to their activities in the construction site.
Pesticide Use and Management	1. If pesticides are used, is their selection and management consistent with good international industry practice and part of an integrated pest management and/or vector management strategy?	1. The Project will not involve any pesticides but if fumigation will be required within the camp facilities, locally certified companies will be engaged to provide the services while observing national and international requirements on pesticides
Performance Standard 4 **Community Health, Safety and Security**		
Theme	**Criteria**	
Community Health and Safety	1. During design and construction, operations, and decommissioning and closure, has the NBS evaluated the potential for community impacts associated with the project considering: a) Natural resource issues? b) Exposure to disease?	1. Yes, NBS has evaluated the potential for community impact a) Use of fire wood and dust emissions b) Exposure to HIV/AIDS, STIs and other communicable diseases,
Emergency Preparedness and Response	1. In the event emergency preparedness and response requires participation of the community, has the NBS: a) Collaborated with government agencies and the community and assisted these entities to establish and maintain preparedness for emergencies?	a) Yes, NBS will collaborate with the Fire department, militia men and leaders in respective villages for security of the office building

	b) Gauged government capacity shortcomings to adequately aid the community in emergency response? c) Compensated for government capacity shortcomings to ensure adequate emergency response?	b) Yes and this through provision of emergence vehicles such as ambulance for emergency evacuation to national hospital c) Yes, in some instances the assistance will be issued say to service providers to ensure adequate emergency response
Security Personnel Requirements	1. If the NBS retains security services for the Private Sector Activity, has the NBS: a) Performed due diligence of the proposed security services provider? b) Incorporated specific requirements of new office building into contract specifications for the security services provider? c) Established a grievance mechanism allowing affected communities to present and obtain a robust NBS response to communities' expressed issues with security arrangements? d) Investigated allegations of unlawful and/or abusive acts of security providers?	a) Yes NBS performs due diligence of security services providers on hiring and on regular basis. Also there is a back up for government security due sensitivity of building b) The requirements are made on private security hired by the company not on government security forces as they are answerable to the ministry of home affairs c) Yes the Grievance mechanism is established for local communities to be affected by both security officers private and government. In case of the grievance is against the government security the matter is taken up with the respective leaders of the government force but on the private the grievance is handled by NBS in collaboration with the leadership d) Any allegations are adequately investigated and addressed as they are brought up to NBS

3.7 Administrative Framework

3.7.1 Environment at the National Level

The Minister responsible for Environment (Vice President's Office) is the overall responsible for all matters relating to environment, responsible for all policy matters, necessary for the promotion, protection, and sustainable management of Environment in Tanzania.

The Director of Environment coordinates various environmental management activities being undertaken by other agencies and promotes the integration of environment consideration into policies, plans and programmes, strategies and projects.

EMA 2004 gives NEMC the overall responsibility of undertaking enforcement, compliance, review and monitoring of Environmental Impact Assessment.

3.7.2 Regional and District Administrative Structures

The Regional Administration Act No. 9 of 1997 provides for Regional Commissioners to oversee Regional Secretariats, with District Commissioners directly supervising the District Councils. Local authorities oversee the local planning processes, including establishing local environmental policies.
The National Environmental Policy establishes a policy committee on Environment at Regional level chaired by the Regional Commissioner, mirrored by environmental committee at all lower levels, i.e. at the District, Division, Ward and Village or neighbourhood "Mtaa" Councils.

Under EMA 2004, the Regional Secretariat is responsible for coordination for all advice on environmental management in their respective region and in liaison with the Director of Environment. At Local Government level, an Environmental Management Officer should be designated or appointed by each City, Municipal, District or Town Council. In each City or Municipality or District Environmental Committees should be established to promote and enhance sustainable management of the Environment. The Ward Development Committee is responsible for proper management of the environment in their respective areas. The District or Municipal Council designates for each administrative area as township, ward, village, '*mtaa', 'kitongoji'* and Environmental Management Officer to coordinate all functions and activities related to protection of environmental in their area. In Dodoma Region, Dodoma Municipality, Tambukareli Ward such environmental structures are there and the Consultants consulted and worked with the Ward Executive Officer (WEO) and Chairman of the respective sub-wards.

3.7.3 Capital Development Authority

Capital Development Authority (CDA) was established through the Government Notice No 230 of 12th October 1973 under Parastatal Act No 17 of 1969 with its amendments in 1992. The Capital Development Amendment Order of 2000 extended the tenure of the CDA into developing Dodoma into a capital city of Tanzania. The authority was developing the capital through Capital Transfer Programme. The authority uses the decentralization by deconcentration form to manage land and its associated urban development activities in Dodoma. The administration and organization structure of CDA is presented below.

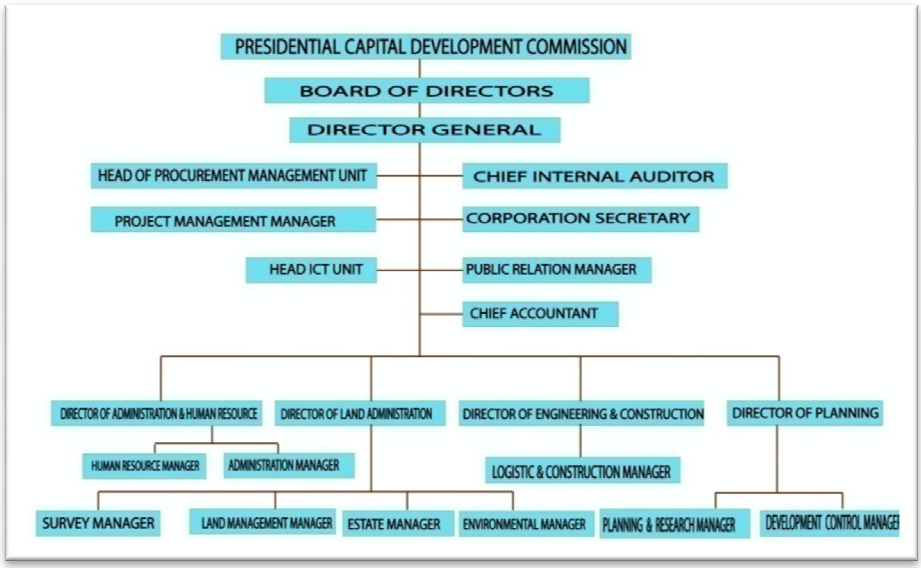

Figure 13: Organization structure of CDA

Roles and Functions of CDA

i. To implement the decision to transfer the Capital of Tanzania to Dodoma.
ii. To prepare plans for the development of Dodoma as the Capital of Tanzania and submit the same to the president, and further to implement the plans approved by the president.
iii. To carry out and effect the necessary development of Dodoma so as to render the same suitable for the Capital of Tanzania.
iv. To advise and assist the Government on orderly transfer to Dodoma of various Government Institutions and other public officers.
v. To acquire and hold, subject to the directions of the president, land and other immovable properties.
vi. To provide any service or facilities which any ministry, Department or division of the Government, any public corporation or other parastatal institution, or any company, firm or other person may require for an orderly transfer of its business, activities, and personnel to Dodoma.
vii. To do anything or to enter into any transaction which, in the opinion of the Board of Directors, is calculated to facilitate the proper and efficient carrying of its activities and the proper performance of its functions.

The Project Proponent, NBS will work closely with the CDA for the success of the proposed project.

3.7.4 Administrative Framework for National Bureau of Statistics

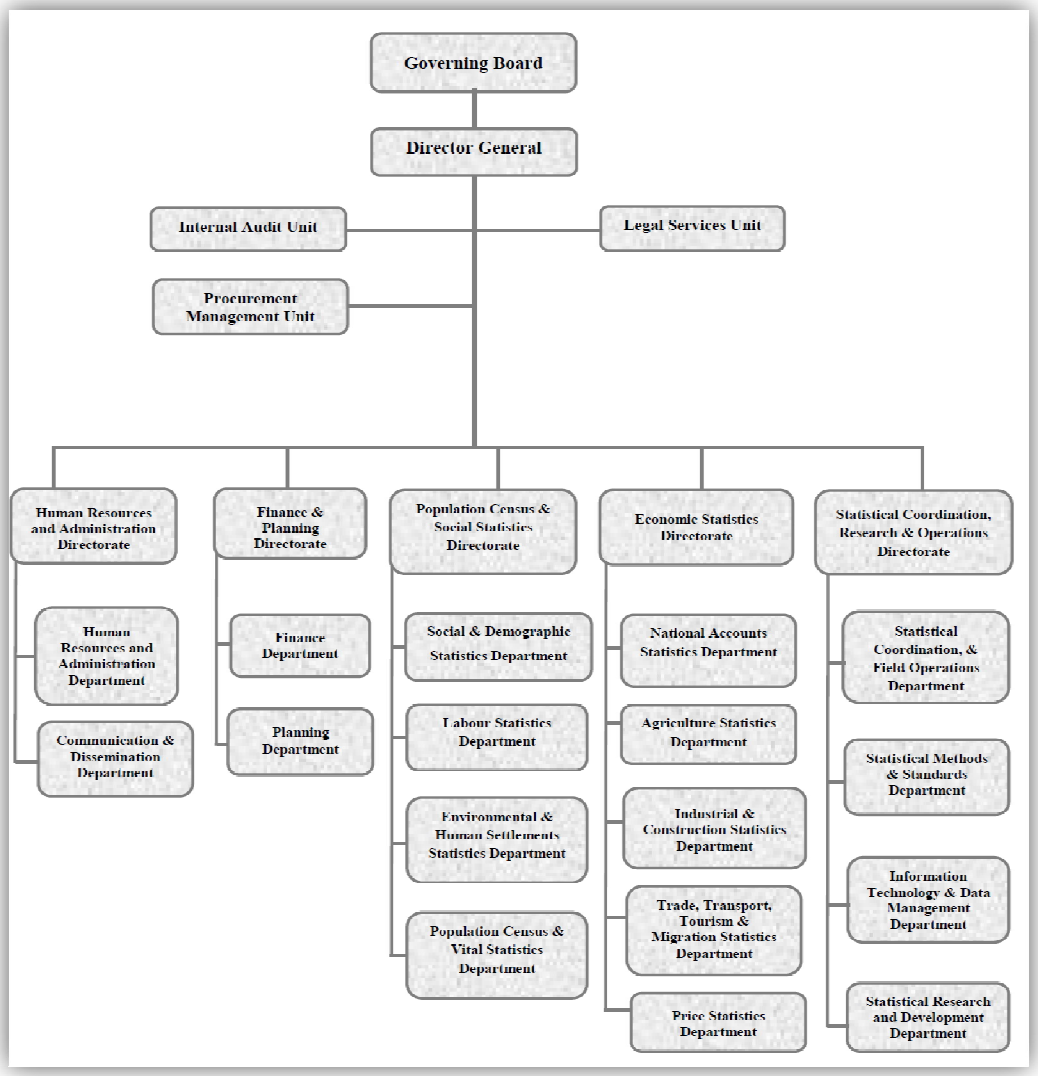

Figure 14: Organization structure of the National Bureau of Statistics

Under this structure the Human Resource and Personnel Department is responsible for Environmental issues. The day to day environmental issues of the proposed project will be coordinated under this department

4. ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

4.1 Physical Environment / Characteristics

4.1.1 Location

Dodoma Municipal Council is located at the south eastern end of the Tanzania Central Plateau at an elevation of 1,200 metres above sea level with coordinates 6°10'23"S 35°44'31"E. The Municipality is located at the geographical centre of the country on the vital central railway line; and on major crossroad of the national east west trunk road and the famous Great North Road (Cape Town to Cairo), which passes in Tanzania through Mbeya, Iringa, Dodoma, Babati and Arusha. The municipality is 486 kilometres west of Dar es Salaam and 441 kilometres south of Arusha.

The Municipality of Dodoma covers the Capital District which is an area earmarked for the Capital Development Area. The area involved includes the area earmarked for urbanization to a population of 1,000,000; future International Airport, underground water catchment area; agriculture and livestock grazing area, a forestation and conservation areas; and other necessary institutional and service facilities. Numerically therefore Dodoma Municipal Council covers an area of about 276,910 hectares,(equivalent to 2,769 sq. km), radiating 30-40 kilometres in each direction from the present centre of the existing town. It is the smallest district in Dodoma region representing 6.3% of the total area. It is a market centre for the surrounding areas that further are sparsely populated.

4.1.2 Administrative Location

At different stages of the project development, the project proponent NBS and its contractors will have to work and constantly communicate with various government authorities from the regional level to lower levels of the district/municipality, division, ward and finally at the sub-ward (mtaa) level. This is mainly related to a number of links ranging from roads of access to socio-economic development initiatives and support services.

Administratively the project is under the jurisdiction of Dodoma region, Dodoma district/ municipality. The Municipality has 41 wards divided into 4 divisions which are Dodoma Mjini, Hombolo, Kikombo and Zuzu.

The general project area is within Dodoma Mjini division particularly in Tambukareli ward. Tambukareli ward is further divided into sub wards ("Mitaa") which are Salmin, Reli, Sechlela and Amani.

Table 10: Number of administrative sub-divisions in Dodoma district

Municipality	Division	Wards	Sub-wards (mitaa)	Villages	Hamlets
Dodoma	4	41	170	18	89

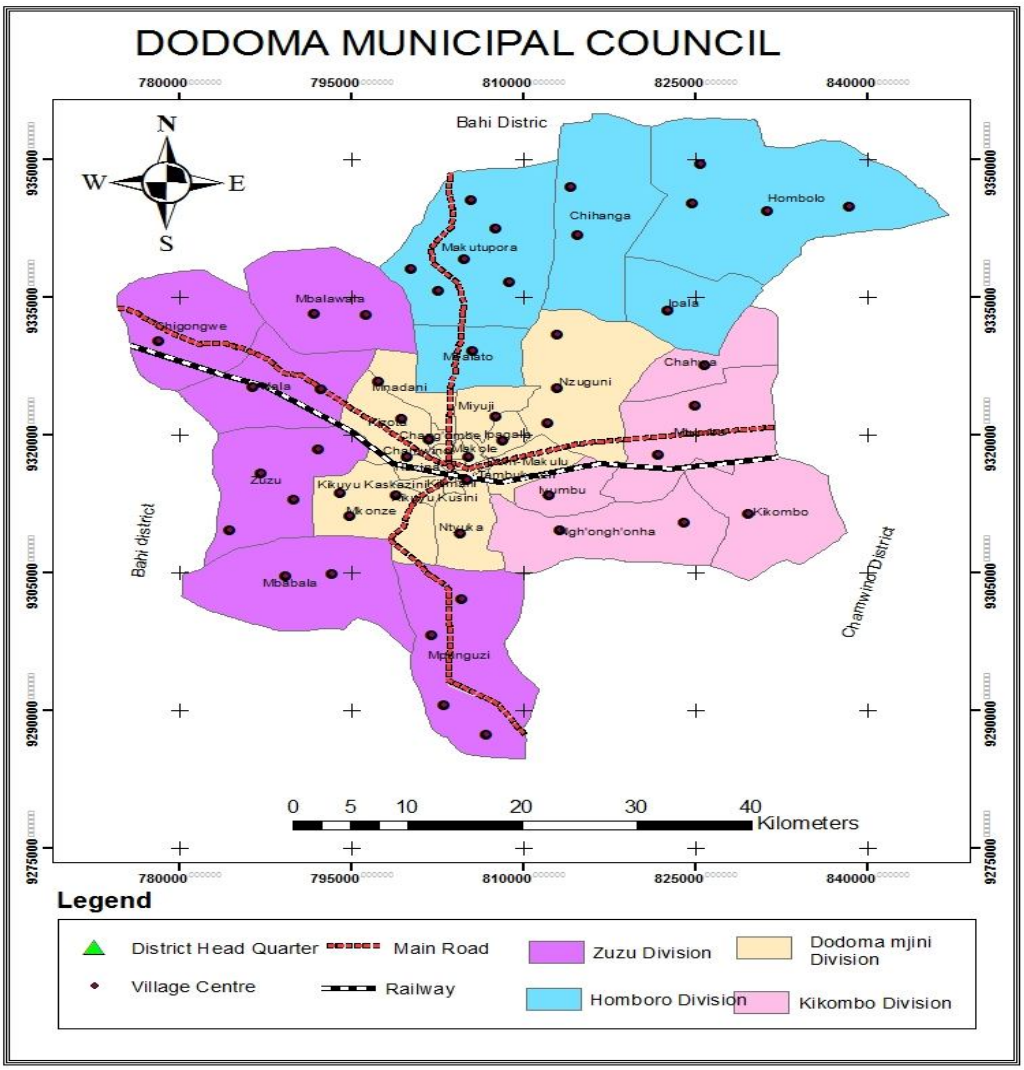

Figure 15: Dodoma Municipal council showing the divisional boundaries

4.1.3 Climate

The climate of Dodoma is semi-arid, characterized by a marked seasonal rainfall distribution with a long dry and short wet seasons falling through December to April each year. In 2011 the total rainfall was 643.1mm while in 2012 it was 605.1mm. However the calculated total annual rainfall ranges between 550-600mm per year. The general trend of average temperature varies from 20^0C in July to 30^0C in November each year. The highest temperature is 31.4^0C while the lowest is 14.5^0C. Due to the semi-arid nature of Dodoma Municipality, dry wind is a common feature with increasing wind speed in July to November. So it can be concluded that wind speed is usually high in dry season compared to wet season. The typical case is shown in the table 11 below as per 2012 weather statistics.

Table 11: Annual Distributions of the Meteorological Parameters, 2012

Items	J	F	M	A	M	J	J	A	S	O	N	D
Mean rainfall (mm)	124.0	103.4	124.4	81.9	01.2	0.0	0.0	0.0	0.0	15.8	m	154.4
Max. Temp. in °C	29.2	30.6	29.0	28.4	27.5	27.4	27.0	28.1	29.8	31.4	31.3	30.6
Min. temp. in °C	19.2	19.3	18,8	18.2	17.1	15.6	14.5	15.7	16.3	18.0	19.7	19.7
Relative Humidity (%) 0600Z	79	76	81	77	72	76	69	66	63	61	67	70
Relative Humidity (%) 1200Z	51	44	54	53	48	39	36	35	31	32	37	45
Pan Evaporation (mm)	6.2	n.d	n.d	n.d	n.d	6.1	6.6	7.9	9.5	10.6	n.d	n.d
Sunshine (Hours)	7.3	8.6	7.9	8.6	8.1	9.7	10.4	10.1	10.3	10.5	10.0	9.1
Wind Speed (knots) 0600Z	5	9	5	11	13	13	14	14	13	15	11	9
Wind Speed (knots) 1200Z	6	5	7	8	11	8	12	12	13	11	12	9

Note: n.d: no data available (Source: Meteorological Station Dodoma, 2013)

4.1.4 Soil Characteristics in the Project Area

According to the Geotechnical Investigations carried out by M/s NROPLAN Tanzania Limited in September 2016, the soils and land on the project site has the following characteristics

a) the site is characterized by overburden soils between the ground surface to a thickness of about 2.6m to 6.5m below the ground level underlain by highly weathered granite rock to a depth of 15.0m below the ground level where drilling ended during investigations. The overburden soils consist mainly of Clayey Sands of low plasticity with thin lenses of Sandy Clays of low plasticity.
b) No groundwater was encountered at site for all boreholes drilled up to 15m below the ground surface.
c) The allowable bearing pressure of 200kPa can be allowed for the assumed pad foundation size of 3.6x3.6m to be laid at a depth of 2.0 – 2.5m below the ground level for settlement limited to 25mm. In case of different foundation size the allowable bearing pressure needs to be re-computed.
d) Side walls are anticipated to be stable requiring no supports and protection during excavations.

4.1.5 Seismicity Potential

Eastern and Southern Africa is a region prone to seismic hazards due to the presence of East African Rift Valley system. Some destructive earthquakes, some leading to loss of

life have been recorded recently in Bukoba located in Kagera Region. Dodoma municipality is not isolated from these tremors.

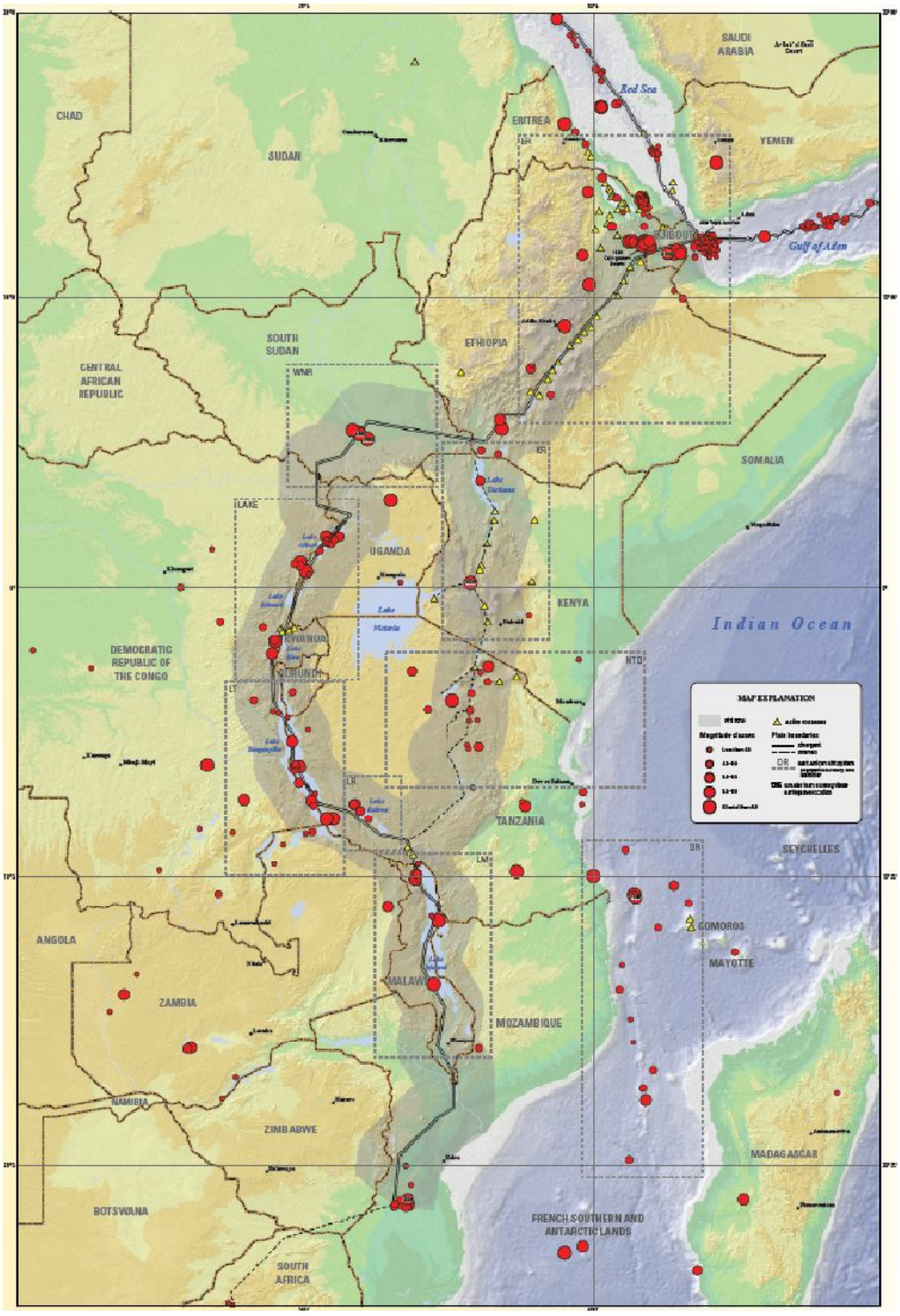

Figure 16: Earthquake events within Eastern and Southern Africa (source: Compiled by Gavin P. Hayes et al 2014)

The figure above presents the level of the earthquake in Eastern and Southern Africa including Tanzania particularly our area of interest Dodoma where the proposed project will be constructed. Based on the map above it is evident that the density of earthquake occurrences is concentrated along the rift zones following both the eastern and western

arms. In Tanzania there are a few occurrences along the coast, with higher concentration on the western arm of the rift system that covers Lake Nyasa, through Rukwa and Lake Tanganyika areas.

The recent occurrence in Bukoba measured at 5.7 on a Richter scale, left 13 people, over 200 injured and millions and millions worth of properties damaged. Historical earthquakes have been recorded in the region within 150km of the epicenter; however only a few damaging events have occurred in the last 117 years according to CATDAT and other independent earthquake reporting sites. In March 1945, 5 people were killed in the Masabe earthquake, just north of where this one occurred. Similarly in 1947 and 4 May 1960 shocks have caused damage in the area. June 30 1952 (M6) and 1994 (M4.5) had shocks closer to Bukoba. However, the catalogues show that there has been very few earthquakes in this region in general (within 100km), with other parts of Tanzania, Uganda, Rwanda and Burundi usually affected by earthquakes.

Based on the East African catalogue for earthquakes, approximately 10 earthquakes with magnitude greater than 6, and 27 earthquakes with magnitude between 5.0 and 5.9 have been recorded over a period of 90 years from 1910 to 2002. This gives an average occurrence of one big earthquake every 3 years. Preparatory precautions have therefore to be taken when designing the structure likely to be subjected to these never ending tremors.

4.2 The Socio-economic Characteristics

4.2.1 Demographic Features

a) Population

According to the 2012 National Housing and Population Census, the population of Dodoma Municipality was 410,956 consisting of 199,487 males and 211,469 females representing (24%) and (1%) of the Dodoma region and national population respectively. Kizota ward had the largest population size (34,453), followed by Chang'ombe (25,415) and Hombolo (22,457). Uhuru ward had the smallest population size (2,419)

The 41 wards of Dodoma Municipality are grouped into four divisions which are Dodoma Mjini, Hombolo, Kikombo and Zuzu. Statistically; 61.5% (252,854) of the population in the Municipality is found in Dodoma Mjini division, 15.8% (65,000) in Hombolo division, 14.1% (57,955) in Zuzu division and 8.6% (35,147) in Kikombo division.

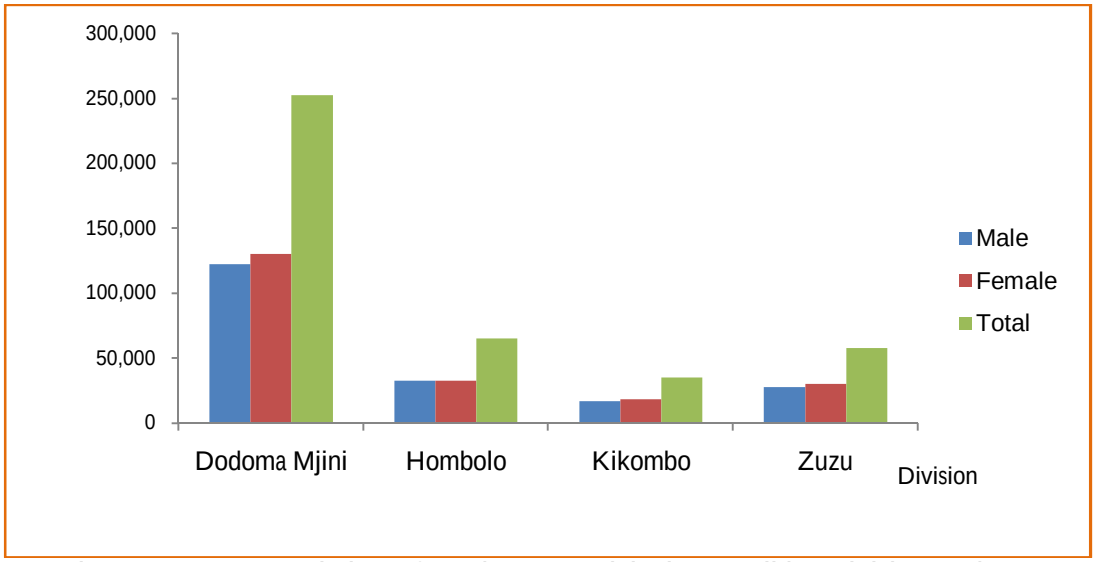

Figure 17: Population of Dodoma Municipal Council by Division and Sex
Source: Computed from 2012 National Census Data

The highest household size in the Municipality was noted in Hombolo division (4.6) suggesting high fertility level in the area with sex ratio of almost one male to one female (99 male population per 100 female population). The details of household size and sex ratio by ward and division are indicated in figure 17 below.

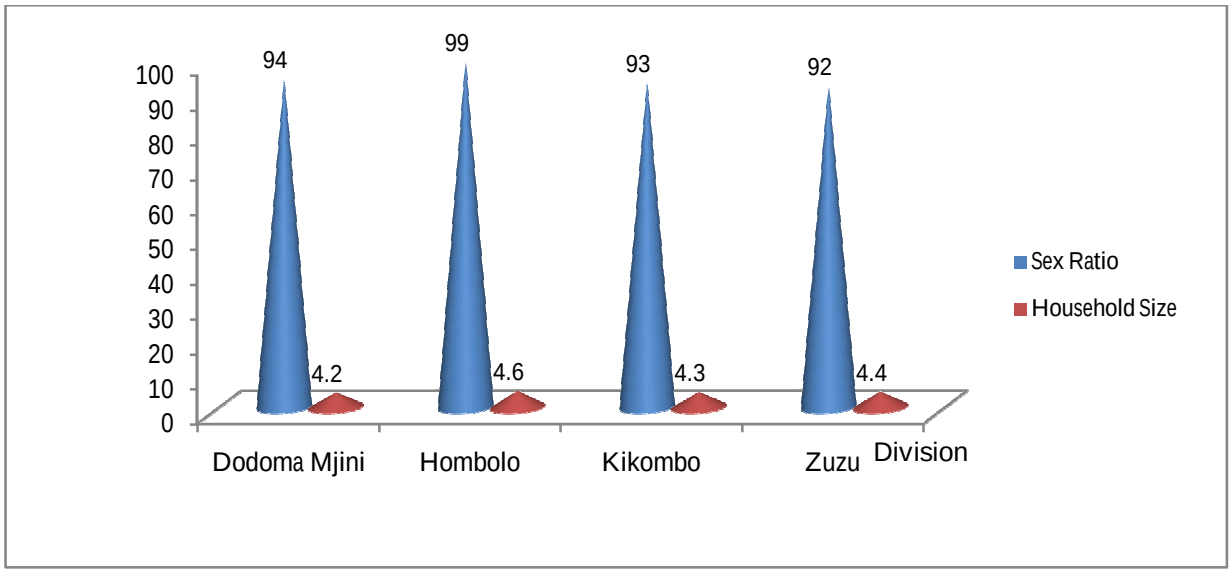

Figure 18: Population of Dodoma Municipal by Sex Ratio and Household Size
Source: Computed From 2012 Census Data

Population Growth and Characteristics

Over the past years, the population of Dodoma urban district has been increasing steadily. In 2002 it was 322,811 (NBS, 2002) representing an inter-censual population increase of 120,146 people from the population of 1988 which was 202,665.This is equivalent to 59% increase. The corresponding average population annual growth rate was 3.3%. Between 2002 and 2012 the population increase was 88,145 only, representing

an increase of 27% implying a decline in the average population annual growth rate by 0.9% compared to the previous inter-censual period. In general the Dodoma Municipal Council population dynamics is on a growing trend in both size and settlement.

Population Projection

Basing on the annual growth rate of 2.7 % of 2012, the population of Dodoma Municipal Council is exponentially projected at 441,636 in 2015, 463,353 in 2017 (five years since 2012 census) and 522,428 in 2022 (ten years after the 2012 census) as indicated in Figure below. The detail of the projected population by ward from the year 2013 to 2022 is shown in figure 18 below.

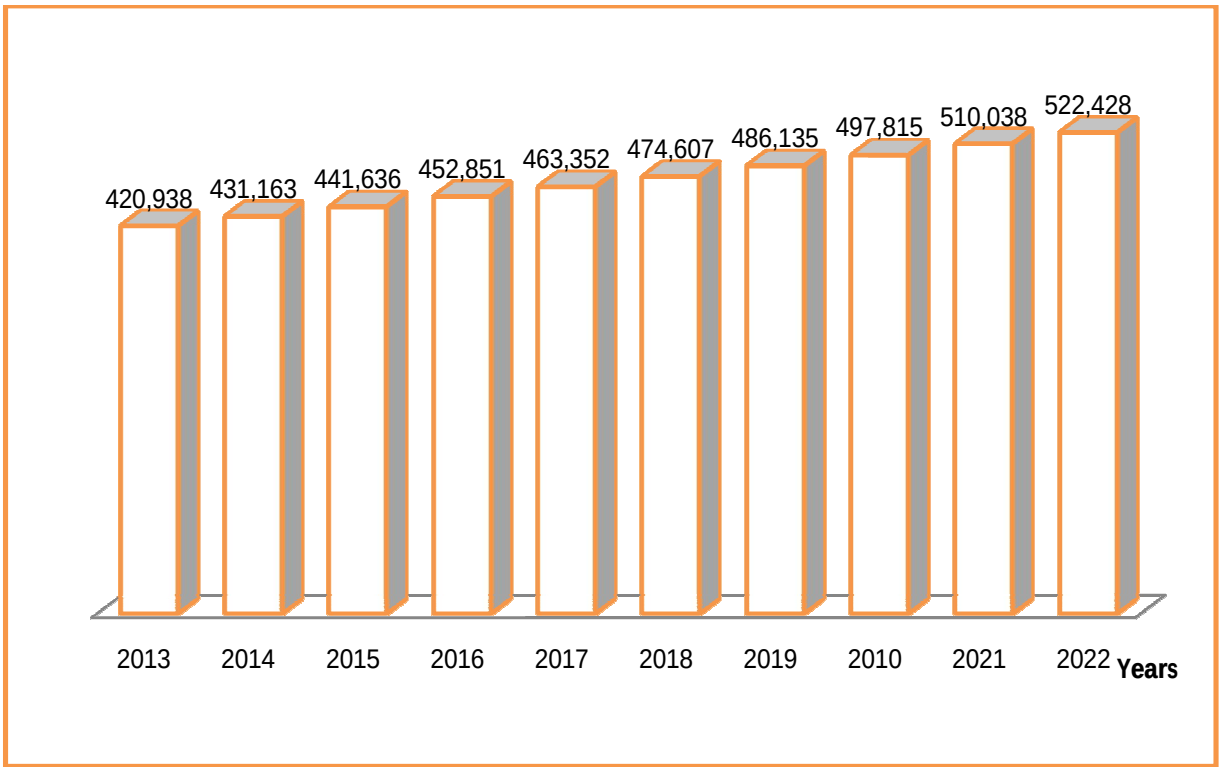

Figure 19: Population Projection From 2013-2022
Source: Generated from 2002 and 2012 Inter-censual Data

The Population Density

The population density for the Municipality was 116.6 persons per sq. km in 2002, 148.4 persons per sq.km in 2012 and in 2015 is 160.9 persons per sq.km as obtained from the projected population. In the next census which will be in 2022 the population density is projected to be 202.3 persons per sq.km

Age and Sex of the Population by Area of Residence

Table 12 below shows that the bulk of the population is in the 15-64 years age group, which accounts for 58.2% of the total population of the Municipality. This depicts the council as having a youthful and economically active population, which demands for adequate provision of creating more job opportunities outside agriculture where there are severe strains already. It is observed that 37.6% of the population is found in 0-14 year's

age group. Equally this demands provision of social services such as education and health facilities to carter for this segment of the population. While only 4.2% are in age group 65 years and over who also need care and support from the active population. This indicates every 100 active population serves 72 dependants (Figure 19) compared the regional and National dependency ratio of 102 and 92 respectively.

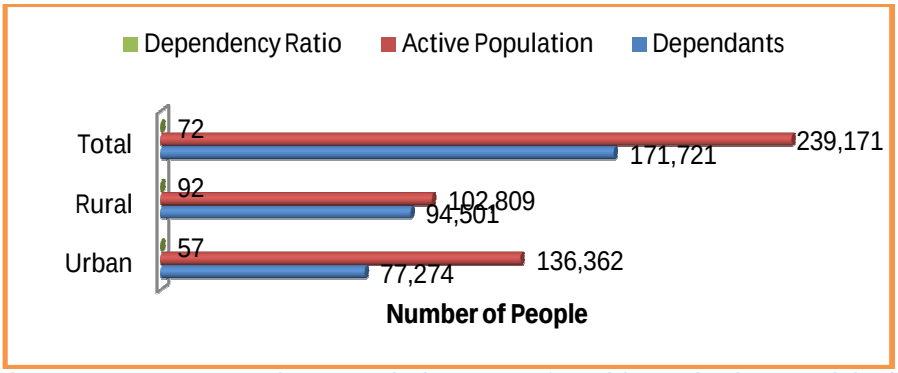

Figure 20: Dependency Ratio by Area of Residence in the Municipality (Source: Generated From 2012 Censual Data)

Table 12: Population Distribution by Age and Sex by Area of Residence in DMC

Age Group	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 - 14	34,941	36,079	71,020	41,811	41,642	83,453	75,752	77,721	154,473
15 - 64	65,505	70.857	136,362	49,523	53,286	102,809	115,028	124,143	239,171
65+	2,977	3,277	6,254	4,730	6,328	11,058	7,707	9,605	17,312
Total	103,423	110,213	213,636	96,064	101,256	197,320	199,487	211,469	410,956

Source: Generated From 2012 Census Data

Accordingly, the three components responsible for population change, namely: mortality, fertility and migration have influenced the population growth and its population growth rate dynamics in the Dodoma's demographic and socio-economic trends. The results show that the Population growth for the period 2002 to 2012 decreased in growth and in its rates.

Particularly in mortality it is reported that Infant Mortality Rate (IMR) has declined for both sexes from 135 deaths per 1,000 live births in 2002 to 79 deaths per 1,000 live births in 2012. Under Five Mortality Rate (U5MR) for both sexes also has declined from 230 deaths per 1,000 live births in 2002 to 127 deaths per 1,000 live births in the year 2012. The mortality projected estimates further show that the life expectancy at birth for males is higher compared to that of females, which is not expected. Life expectancy at birth for Dodoma has increase from 44 years in 2002 to 53 years in 2012 for both sexes. For male population, life expectancy at birth has increased from 45 years in year 2002 to

53 years in 2012, while for female population; the life expectancy at birth has increased from 42 years in 2002 to 52 years in 2012.

On fertility, TFR has declined from 6.5 children per woman in 2002 to 6.1 children per woman in 2012.

4.2.2 District Economy and Per capita income

About 75% of people's income in the Municipality is from agriculture and animal husbandry, 25% of the population is engaged in petty business such as retail trading, carpentry and food vending. Other activities include small and medium industries, consultancy and construction work. Main industrial products are wine, mattresses, furniture and mineral water. Others include honey, wax and herbs from the forests.

Per capita income, also known as income per person, is the mean income of the people in an economic unit such as a country or city. It is calculated by taking a measure of all sources of income in the aggregate (such as GDP or Gross National income) and dividing it by the total population. Per capita income is estimated to be Tsh. 407,486 (NBS, 2012; IMED, 2013). Looking at the Municipal level, it is vital to establish a system of tracking information on all sources of income in order to aggregate and consequently obtain the desired index as a measure of per capita income.

4.2.3 Infrastructures

a) Roads

The DMC has six types of roads including; collector roads (157.2km), feeder roads (168.8km), urban roads (164.0km), these include the roads not in the ACT which has collector roads (44.0km), urban roads (25.0km). The total road network under jurisdiction of Dodoma Municipal Council cover a total length of 548.20km.The roads are paved, gravelled or earthed. The conditions of these roads are good, fair or poor. Table 13 details out the situation. In addition to the Municipality road network there are 148km of paved road and 62km of earth roads owned and maintained by TANROADS.

Table 13: Road Surface Type with Conditions in Dodoma Municipal Council

Road Type	Length (Km)	Condition		
		Good (Km)	Fair (Km)	Poor (Km)
Paved	73.5	48.0	9.0	16.5
Gravel	186.1	66.3	79.1	40.7
Earth	288.6	98.2	17.3	173.1
Total	548.2	212.5	105.4	230.3

Source: Municipal Engineer's Office, 2015

The general condition of the Municipal road network is 38.8%212.5Km) good, 42.0% (230.3Km) poor and 19.2% (105.4) fair. Most of the road network is of earth type, it represents about 52.6% (288.6Km) while gravel roads takes 33.9% (186.7Km) and paved roads are only 13.4% (73.5Km)

b) Transport and Modes of Access to Transport

The main mode of intermediate transport is by bicycle followed by ox carts and then the main conventional ones such as buses. In their absence, walking and head loading are the commonest mode of travel and transport in the Municipality.

Access to Transport

Following the trade liberalization policy in the country, the Municipality has witnessed an increase in the number of transport modes such as buses, minibuses, cars, etc. The majority of these transport modes ply in the city and major trading centres leaving the bulk of the rural areas underserved. Service provided to most of the rural areas is not sufficient due to poor road network that resulted into frequent breakdowns thereby incurring heavy operational costs. Some private minibuses operate in the rural areas, but their operations are inadequate and sporadic leaving the rural people with no option but to resort to use of unlicensed and unauthorized vehicles as the only means of transport.

c) Airport and Airstrip

There is one operating airport in the DMC that is located in Kiwanja cha Ndege ward. The air services are mostly provided by a Mission Aviation Fellowship Company (MAF) and other undetermined air service providers. The air services are not used commercially effectively since the business has not captured well the market. However in most cases the airport serves well for Government business when top Government officials visit the capital of Dodoma. Due to its location and taking cognizance of the capital city the Tanzania Government started designing and construction of Dodoma International Airport which is to be located at Msalato in Miyuji ward. Compensation has been effected and designs are in progress. There is an airstrip at Hombolo which is privately used by the Catholic Missionaries.

d) Railway

Dodoma Municipality is well connected with most areas through the central railway line which is a major railway line in Tanzania. It runs west from Dar es Salaam to Mwanza and Kigoma. In the Municipality, there are three railway stations at Zuzu, Kikombo and Dodoma town (Tambukareli). However, operationally services provided by the Railway Corporation have not been impressive due to number of factors including having aging locomotives, wagons, railway infrastructure and managerial problems.

e) Communication Infrastructure

Communication services in the Municipality have expanded from just the presence of postal office/agencies, radios, TVs to the provision of cellular, e-mail, facsimile and interment services. This has been a notable improvement in communication services which has accelerated the economic activities in the Municipality. Among the service providers who have played well in this venture include: Airtel, Vodacom, TTCL mobile, Tigo, Zantel, Halotel and Internet services. Radio stations include: RTD, RFA, KISS

FM, Nyemo FM, Dodoma FM, RADIO MWANGAZA FM, RADIO ONE, East Africa Radio, Capital Radio FM, Kifimbo Radio FM, RASS FM, Clouds FM and RADIO UHURU. These services have been important in terms of social and economic prosperity of the Municipal.

In addition, the Municipality has access to Television stations namely Television ya Taifa (TVT), Independent Television(ITV), Star Television, Agape Television Net Work and Channel Ten. Common newspaper in the Municipality include Mwananchi, Guardian, Uhuru, Mtanzania, Mzalendo, Tanzania Daima, Daily news, The Citizens and East African newspaper to mention some.

f) Health Facilities

The health sector is made up of the people, institutions and resources, arranged together in accordance with established policies, whose primary purpose is to promote, restore and maintain health. It includes government ministries and departments, hospitals and other health services, health insurance schemes, voluntary and private organizations in health, as well as the pharmaceutical industry and drug wholesale companies. In many cases, not-for-profit health care providers constitute an important part of the health sector.

Description of the levels of health provision health facilities and its distribution, health statistics, family planning and reproductive health in Dodoma Municipal Council is as follows.

1. Ownership of Health Facilities

In Dodoma Municipality there are 77 health offering points, among which 39 are owned by government while the remaining 38 are owned by private entities including religious institutions and individual health specialists. Table 14 shows the ownership pattern in relation to the types of health facilities available in the respective region.

Table 14: Ownership of Health Facilities, 2015

Ownership	Dispensaries	Health Centres	Hospital	Specialized Clinics	Total
Public	31	4	3	1	39
Private	25	9	3	1	38
Total	56	13	6	2	77

Source: MOH's Office, 2016

2. Number of Medical Personnel in Dodoma Municipal Council

In relation to other personnel, there has been minimal number of pharmacists in Dodoma Municipal Council as reported in 2013. According to the statistics, the region has only one personnel apiece shared between sex. The largest share of medical personnel distribution is grasped by clinical officer with about 39 in total (data on classification by sex is unavailable) followed by 35 nurses in the male-female ratio of 2 to 33. The numbers for other medical personnel are indicated in Table 15. Since figures

classified by sex for clinical officer is unavailable, it was hard to indicate the total male and female personnel in Dodoma Municipal Council.

Table 15: Type and Number of Medical Personnel by Sex, 2015

Medical Personnel	Sex		
	Male	Female	Total
Doctors	4	4	5
Assistant Doctors	7	9	16
Clinical Officers	25	11	36
Pharmacists	1	1	2
Nursing Officer	0	12	12
Asst. nursing off	5	41.	46
AE Health Officers	18	6	24
Health Ass	7	6	13
Nurses	2	104	106
Nursing Asst.	0	11	11
Clinical Asst	10	6	16
Other Medical Carders	14	19	33
Medical att.	7	76	83

Source: MOH's Office, 2015

3. Basic Health Indicators in the Municipality

Basic health indicators in the Municipality are for the year 2015 and these are summarized with the following variables: infant mortality rate, under five mortality rate and maternal mortality rate.

4. Curative Health

Among all diseases in Dodoma Municipal Council, Malaria is pronounced to be the most common disease in tropical area fall second in treatment cases with 6% behind Ari which has been reported to have more than 19%. Moreover, in such list of the highly treated diseases in the region included Non-skin fungal, diarrhoea, pneumonia, asthma, intestinal worms, fractures and skin diseases as indicated in the Table 16

Table 16: Ten Most Common Causes of Morbidity in DMC in 2015

Name of Disease	Number of cases<5	Percentage (%)	Number of cases 5+	Percentage (%)	Rank
Malaria	31,030	25.8	39,411	27.3	1
ARI	25,741	19.7	30,155	22.6	2
Other Diagnosis	11,755	13.3	20,359	10.3	3
Diarrheal disease	15,738	8.7	13,282	13.8	4
Skin disease	8,657	9.6	14,650	7.6	5
Pneumonia	13,106	6.6	10,110	11.5	6
Intestinal worms	2,835	4.7	7,118	2.5	7
Anaemia	2,765	3.3	5,087	2.4	8
Fractures	815	4.4	6,674	0.7	9

Emergency surgical condition	1,367	3.8	5,873	1.2	10
Total	113,809	100	152,719	100.0	-

Source: MOH's Office, 2015

5. Status of HIV/AIDS in Municipal Council

According to the Tanzania HIV/AIDS and Malaria Indicator Survey (THMIS) 2012, HIV prevalence among adults aged 15-49 in Tanzania mainland has declined progressively from 7% in 2003/04 to 5.3% in 2011/12. While the prevalence of HIV/AIDS in Dodoma region has declined from 3.3% in 2003/2004 to 2.9% in 2011/2012. However, number of PLHIV recorded in Dodoma Municipal council was14,087; 15,366 and 16,824 in 2011, 2012 and 2013 respectively and the number of PLHIV patients who were on ARVs was 4,485 (2011), 5,271 (2012) and 6,105 (2013).

6. The Prevalence of HIV/AIDS in Dodoma Municipal Council

The prevalence of HIV/AIDS in Dodoma Municipal Council is as indicated in Figure 20.

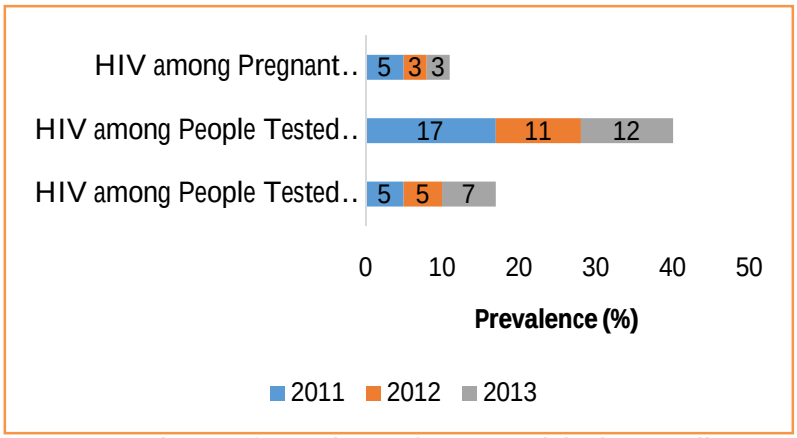

Figure 21: Prevalence of HIV in Dodoma Municipal Council

Source: MOH's Office, 2013

7. Efforts to Control HIV/AIDS Infection in the Municipality

The Municipal Council Authority is doing its best to fight against HIV/AIDS infections. Some of the efforts exerted to reducing the infections include:-

- Prevention of Mother to Child Transmission Counselling (PMCTC)
- Provider Initiated Testing and Counselling (PICT)
- Voluntary Counselling and Testing (VCT)
- Client Initiated Testing and Counselling (CITC)
- Care and Treatment Clinic (CTC)
- HIV Counselling and Testing (HCT)
- Health Education on HIV to prevent new infections
- Post-Exposure Prevention (PEP) and HIV etc.

8. Mortality in Relation to Disease Cases

However despite the fact that cardiovascular diseases is the second behind other diagnosis in treatment cases in Dodoma Municipal Council, the disease is reported to have been causing sufficient higher number of deaths in the area with specifically 58.8% involvements. Other diseases which have reported to contribute highly to the death cases in DMC include Pneumonia, Anaemia, Fractures and emergency surgical conditions indicated in Table 17. Ari which is the most receiving treatment disease is not among the top ten lists.

Table 17: Ten Most Common Causes of Mortality in DMC in 2015

Name of Disease	Number of Deaths	Percentage	Rank
ARI	2	0.4	8
Other diagnosis	291	58.8	1
Pneumonia	29	5.9	3
Normal deliveries	0	0.0	9
Anaemia	3	0.6	7
Fractures	18	3.6	5
Emergency surgical cond.	11	2.2	6
Other injuries	20	4.0	4
Cardiovascular diseases	121	24.4	2
PID	0	0.0	9
Total	38	100	

Source: MOH's Office, 2016

9. Reproductive Health

Reproductive Health is defined as" a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity in all matters related to the reproductive system and its functions and processes. The main components of Reproductive Health includes; safe motherhood, family Planning, prevention and management of unsafe abortion and post-abortion care, prevention and management of reproductive tract infections including sexually transmitted infections and HIV/AIDS, prevention and management of infertility, prevention and management of cancers of the female and male reproductive system including the breast, responding to concerns about menopause and andropause, discouragement of harmful traditional practices and gender-based violence that affect the reproductive health of women and men and information and counselling on human sexuality, responsible sexual behaviour, responsible parenthood, preconception care and sexual health.

Safe Motherhood

Creating the circumstances within which a woman is enabled to choose whether she will become pregnant and if she does, ensuring she receives care for prevention and treatment of pregnancy complications, has access to skilled birth attendants, has access to emergency obstetric care if she needs it and care after birth so that she can avoid death or disability from complications of pregnancy and childbirth. The Safe Motherhood

Initiative Program aims at reducing maternal and infant mortality by improving access to quality essential obstetric and neonatal care.

Antenatal Services

Focused antenatal visits enable common pregnancy related diseases to be detected early and allows for early initiation of treatment to ensure a reduction in risk and child during pregnancy and delivery.

Morbidity directly associated with pregnancy includes anaemia, high blood pressure related to pregnancy, hyperemesis gravidarum, and other symptoms such as abdominal discomfort, and ankle oedema. Conditions that may occur in a pregnant woman that may place her and her baby more at risk for which data is collected in Dodoma Municipal Council include malaria, HIV, sexually transmitted diseases such as syphilis, and severe anemia in pregnancy.

Assisted Delivery

To ensure timely identification of complications during labour and delivery, pregnant women are advised to attend health facility, attended by a skilled health worker, with appropriate supplies and equipment to management complications.

Family Planning

The need for family planning services arises from the risks of maternal, infant and child morbidity and mortality when pregnancies are too early, too many, too late and frequent and from a high fertility rate of 6.4. The contraceptive prevalence rate and the current unmet need for family planning are still high and needs to be addressed.

Up to the late 2013, about 8,789 women were reported to have been using one of family planning methods in Dodoma Municipal Council. However, there has been noted a high usage of injection method of family planning than the rest with about 5,223 equivalents to 59.4% in preference. Moreover, neither IUD nor traditional method is reported to have been in use in the Municipality leaving on three methods (injection, pills and condom) in practice. Table 18 reveals such statistics.

Table 18: Proportion of Women Using Family Planning Methods

Method	IUD	Pills	Injection	Condom	Traditional	Total
Number	0	2,661	5,223	905	0	8,789
Percentage	0.0	30.3	59.4	10.3	0.0	100.0

Source: MMD's Office, 2016

10. Children Vulnerability

The data shows that there are about 12,230 children living under vulnerable conditions in Dodoma Municipal Council, of which 6,174 equivalents to 50.5% are females and 6,056 equivalents to 49.5% are males. Table 19 below specify such distribution.

Table 19: Number of Vulnerable Children by sex in 2015

Sex	Female	Male	Total
Number	6,174	6,056	12,230
Percentage	50.5	49.5	100.0

Source: MMD's Office, 2016

e) Education

The Tanzanian government's commitment to education as an integral part of its social and economic development started shortly after independence. Before independence, educational access was very restricted despite the fact that education is a basic human need and a key factor in development. Investment in education will directly raise the well-being of individuals, but it will also raise their 'human capital' and capacity to acquire means for the satisfaction of other basic needs. Education is also seen as a means of reducing inequality, as a mechanism of making other investments more productive and as an avenue for social and political development. These positive `externalities' make educational investment also highly profitable for society.

Dodoma Municipal Council is continuously adopting various steps to ensure that education provided is the primary vehicle by which children of the poor can lift them out of poverty and obtain the means to participate meaningfully in the economy and in society.

Education in Dodoma Municipality is provided both by the public and private sectors. The general structure of education system is as follows:

i. 2 years of pre-primary education for ages 5-6 (year 1 and 2)
ii. 7 years of primary education for ages 7-13 (Standard I-VII)
iii. 4 years of ordinary level secondary education for ages 14-17 (Form 1-4)
iv. 2 years of advanced level secondary education for ages 18–19 (Form 5 and 6)
v. 3 or more years of tertiary education

Statistics show a steady improvement in most components of education services and facilities. The details of each level are as narrated below:

1) Pre-Primary Education

The pre-primary programme aims at preparing and promoting the social, intellectual, emotional and physical development of children below the school going age. It focuses on education through play and proper care of children in a healthily and friendly environment.

2) Primary Education

For the year 2015, the number of primary schools in Dodoma Municipality was 116 whereby, the largest share was dominated by public schools in terms of distribution and quantities.

In all 41 wards of the Municipal there was at least one public primary school in each ward, while private primary schools are found in only twelve wards. These schools attracted a total of 74,529 pupils in 2013, made up of 67,836 pupils from public schools and 6,693 from private schools.

Table 20: Teachers by Qualification -2013/2014

Grade	Male	Female	Total
IIIA	317	1295	1612
DIPLOMA	17	48	65
GRADUATES	28	56	84
MASTERS	0	1	1
TOTAL	362	1400	1762
Teachers by Gender			
Year	Male	Female	Total
2013	374	1,235	1,609
2014	384	1,321	1,705
2015	355	1,358	1,713
2016	362	1400	1762

Table 21: Teachers demand and deficit

Year	Demand	Available	Deficit	%Deficit
2013	1696	1609	87	5%
2014	1702	1705	-	-
2015	1722	1713	9	1%
2016	1808	1762	46	3%

Table 22: School infrastructure and furniture

No.	Type		Required	Available	Deficit	% of Deficit
1	Classrooms		1759	899	542	44
2	Teachers Houses		1759	187	1572	89
3	Latrines	Boys	1333	497	836	63
		Girls	1777	531	1246	70
4	Offices		184	118	66	36
5	Stores		54	27	27	50
6	Desks		28484	27250	1234	4
7	Tables		1713	1020	693	40
8	Chairs		617	363	288	17
9	Cupboards		1762	346	1416	80

Enrolment of Standard I Pupils in Primary and Private Schools

For the three years (2014to 2016) standard I pupil enrolment in Dodoma Municipality increased marginally from 12279 in 2014 to 14040 in 2016 as it can be seen in below.

Table 23: Standard I Enrolment in Public and Private Primary Schools by Sex

Location and type of school	2014		2015		2016	
	Boys	Girls	Boys	Girls	Boys	Girls
All wards (public and private)	6171	6108	6618	6659	7203	6837

Source: MEO's Office, 2016

The academic achievement from 2013 to 2016

The academic achievements for STD V11 are not encouraging. The performance of STD V11 is 60 % in 2014 while in 2013 is 62 %. In 2015 performance is expected to be 87 %. The following table indicates the STD V11 academic achievements from 2013 to 2016.

Table 24: Academic achievement

Year	No of candidates			Passed				Selected form One			
	B	G	T	B	G	T	%	B	G	T	%
2013	3809	4259	8068	2372	2554	4926	62.1	2372	2554	4926	**100**
2014	3892	4199	8091	2308	2451	4759	60	2308	2451	4759	**100**
2015	3928	4451	8379	2474	2624	5098	62	2474	2624	5098	**100**
2016	**3887**	**4563**	**8450**								

Access to Primary School

i. Classrooms

The district has a total of 899 classrooms and the total enrolment is 72,268 which translate to a pupil/classroom ratio of 75:1. This signals very acute shortage of classrooms as compared to enrolment based on the standard ratio of 35:1. The district needs a total of around 542 classrooms.

ii. Desks

The district has 27,250 desks against an enrolment of 72,268 pupils representing a pupil: desk ratio of 6:1. This shows another problematic situation as the standard ratio is 3:1. In order to reverse this situation the Municipal Council needs a total of 1234 desks.

iii. Housing

The Municipality has 187 teachers' houses in 93 public primary schools this means that on average there are at least two houses in each school. Municipal Council needs a total of 1572 teachers' houses.

3. Secondary Schools

Distribution of Secondary Schools in Dodoma Municipal Council

According to the collected data for the number of secondary schools in Dodoma Municipal Council has been constant at 37 and 18 secondary schools for public and private respectively, enrolment in public schools for 2015 is 16,697 students, 8,296 are boys and 8,501 are girls. Most of these secondary schools are found in Chamwino and Kizota wards, followed by Kiwanja cha Ndege ward, Mtumba, Mbabala and others. Almost 8% of these secondary schools are boarding schools and the rest are day schools. Considerable physical facilities shortages such as furniture (chairs, tables, desks etc.) and other facilities such as dormitories, teacher's houses and offices, libraries, beds etc. have been reported and observed to most secondary schools especially public ones.

Status of Secondary Schools Facilities

The status of secondary school facilities in the Municipality by facility is summarized in Table 25.

Table 25: Status of Facilities in Public and Private Secondary Schools 2014

Type	Status		
	Required	Actual	Deficit
Classrooms	561	437	124
Teachers houses	758	92	666
Student latrines	849	392	457
Teachers latrines	143	91	52
Admin block	37	8	29
Stores	60	9	51
Laboratories	119	16	103
Desks	16,697	15,4887	1210
Teachers tables	1,085	432	653
Cupboards	194	52	142
Shelves	368	135	233
Beds	2270	1784	486
Hostel	90	7	83
Libraries	39	3	36
Teachers chairs	1,264	565	699

Source: MSEO's Office, 2016

NB: The number in bracket is the percentage of the actual to the required

Status of Secondary School Teachers

The estimated number and qualifications of teachers required and the actual present for the year 2015 can be seen in Table 26.

Table 26: Status of Teachers in Public and Private Secondary Schools 2015

Qualification	Required	Actual	Deficit
Licensed teachers	0	14	**0**
Bachelor holders	670	721	**0**
Diploma holders	670	409	**260**
TOTAL	1340	1144	210

Source: MSEO's Office, 2016

NB: The number in bracket is the percentage of the actual to the required.

f) Water Supply and Sanitation

Need for everyone to access safe and clean water is of paramount importance if one is to be healthy and be able to participate in national development and in particular district development.

Unsafe water makes people prone to water borne diseases such as cholera and diarrhoea. With this in mind there is need to have safe water points in all areas in the Municipality

and in doing so promoting sustainable development in the Municipality thereby allowing healthy communities participate fully in all development activities.

Dodoma Municipality depends on several sources including charcoal dams, shallow wells, open spring, rainwater harvesting and boreholes. Dodoma urban areas are mostly served by ground water from Mzakwe Basin. This basin is 30km north of Dodoma town and has a potential of producing 72,000m^3 of water per day from 21 boreholes (100-130m deep). However the current supply of water is 40,000m^3 per day, this is produced from 8 boreholes only against the 21 boreholes available.

Compared to urban areas, water supply in Dodoma rural areas is limited; about 39 villages in the Municipality have 25 deep water wells, 70 shallow water wells, 2 dams, 1 natural spring and 4 wind mills. About 51% of people in the Municipality have access to safe and clean water. The management of water supply in Dodoma urban is under DUWASA. The major sources of water in the Municipality include deep and shallow wells, seasonal river water and dam. In general, access to safe water in Dodoma Municipality is poor and the situation is aggravated by prolonged downtime of water points in urban area. A higher percentage of rural household are using unsafe water.

4.3 Biological Baseline – Fauna

4.3.1 General features of the survey area

The project site is currently occupied by natural crops that have been harvested. The coverage area is 7,187square meters without any human settlements nearby. The immediate development is the Dodoma Convention Centre on the northern side which is used for conferences, meetings and other activities of the same nature.

Like any other area which involves development in terms of building construction, the activities which will involve vegetation clearance, excavation of soils for foundations and landscaping to match the preference. These activities will lead into direct impact on the remaining existing vegetation which also supports the life of other living organisms such as birds and small mammals.

It is for the above reasons that it was decided to conduct the vegetation survey so as to see the vegetation types existing in the project site as well as identify all the plant species and assessing their biological status and document them for future references.

Two documents namely CITES List (Convention on International Trade an Endangered Species of Wild Fauna and Flora) and the IUCN Red List of Threatened Plant Species, were referenced to identify those plant species which fall in any of its categories and appendices respectively. A data base of List of East African Plant species (LEAP Master) were used to identify endemic plant species occurring in the project area. Digital camera was used to take photographs for further illustrations.

4.3.2 Relevant policy and legal framework for biological environment

The challenge to manage the country's biological resources especially vegetation, as a national heritage on an integrated and sustainable basis to optimize their environmental,

economic, social and cultural values remains as pressing as ever. In addition, as a result of the international forest-related UNCED conference in Rio (1992) and continued efforts by the intergovernmental panel on forest, the contribution of forests to the international conservation functions has become an important part of the national policy discussions. The respective policies, legal and administrative framework applicable to the project areas have been addressed under Chapter 3 of this statement.

4.3.3 Survey findings and vegetation in the project area

a) Based on the List of IUCN Threatened Plant species Categories (Version 2009)

The globally threatened plant species from the **IUCN** Red List falls under the following main categories: -

Extinct (Ex),
Extinct in the Wild (EW),
Critically endangered (CR)
Endangered (E),
Vulnerable (V),

Extinct (Ex)

A taxon is Extinct when there is no reasonable doubt that the individual has died. A taxon is presumed extinct in the wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), and throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

In the project area, none of the plant species in this category were identified.

Extinct in the Wild (EW)

A taxon is "extinct in the wild" when it is known only to survive in cultivation, in captivity or as a naturalised population (populations) well outside the past range. A taxon is presumed 'extinct in the wild' when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

In the project area, none of the plant species in this category were identified.

Critically Endangered (CR)

A taxon is critically endangered when the best available evidence indicates that it is facing an extremely high risk of extinction in the wild.

In the project area, none of the plant species in this category were identified.

Endangered (E)

A taxon is endangered when the best available evidence indicates that it meets any of the criteria for Endangered is therefore facing considered to be facing a very high risk of extinction in the wild.

In the project area, none of the plant species in this category have been identified.

Vulnerable (VU)

A taxon is vulnerable when the best available evidence indicates that it is facing a high risk of becoming endangered in the wild.

In the project area, none of the plant species in this category were identified.

b) Based on Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

The basic principles of CITES is to control and monitor international trade in endangered and threatened species.

The convention establishes international legal framework for co-operation of the producer and consumer. This relationship is essential for the conservation of the species traded from the wild. The convention operates by means of a licensing system. At the core of the convention are three appendices-in effect three species lists.

Appendix 1

The appendix includes those species of animals and plants in which, with a few exceptions trade in wild specimens is prohibited.

In the project area, none of the plant species in this category were identified.

Appendix 11

This includes those species whose survival is not yet threatened but may become so. Here trade is allowed in both wild and artificially propagated or captive bread specimens-subject to licensing.

In the project area, none of the plant species in this category were identified.

Appendix 111

This category acts as a support mechanism to domestic legislation, where countries ask other parties to monitor trade on taxa not listed on appendix 1 or 11

In the project area, none of the plant species in this category were identified

4.3.4 Conclusion and recommendations on the status of fauna baseline

Due to the fact that the area for the proposed project has been under constant cultivation, the signs of finding species of conservation value were almost zero

1. Before excavation activities, the top soil for vegetation to be cleared should be kept separately so that after the construction activities it can be spread over land which will not receive permanent works to see if anything of conservation significance emerges.
2. After construction of the new office building, during vegetation rehabilitation the project developer should try to raise the seedlings of the plants in the surroundings of the project area so as to minimize the loss of Biodiversity and comply with the national slogan of ''Kata Mti Panda Miti'' for "Cut a tree, Plant Many Trees"

5 STAKEHOLDERS' CONSULTATIONS AND PUBLIC PARTICIPATION PROCESS

5.1 Public Participation Overview

Public Participation in the initial stages of the project development is of great importance particularly during assessment and planning, design and implementation of the proposed development. The consultant conducted the public participation activities which involved the necessary potential Interested and Affected Parties (I&APs). Public participation through consultation achieved the following:

- a vehicle for community input and facilitated negotiated outcomes;
- it created trust and partnerships;
- negative impacts are minimized;
- positive impacts are enhanced; and
- It provided an up-front indication of issues that may prevent project continuation, that can cause costly delays at a later stage, or result in enhanced and shared benefits.

The Consultant conducted the public participation for the proposed construction of new NBS office building to involve as many potential Interested & Affected Parties as possible. Accordingly, issues arising from this public participation process will be incorporated into the subsequent reports and used in determining mitigation measures and enhancement measures for the positive impacts of the project.

5.2 Public Participation Process

5.2.1 Stakeholders Identification and Analysis of the identified stakeholders

Firstly, the consultants identified organization, groups and individuals to be considered as "stakeholders". This identification was based on their roles and their relevance in the proposed development of an office building in the Municipality. Some of the stakeholders such as government authorities, municipal/district level, wards and sub-wards that might be impacted by or have interest in the project or exercise some influence on the project were predetermined as shown under each level in table 27 below. Even though the list was somewhat exhaustive but not all stakeholders in the list were consulted due to the time constraints and their relevance as far as the new office building is concerned.

Table 27: Stakeholders analysis

a) Authorities or Decision makers		
Level	Institutions	Roles and responsibilities
National Level	Ministry of Finance and Planning	- Parent Ministry where the Proponent of the proposed project falls - Issuing polices on Statistical issues and planning - Enforcement of laws and regulations in the finance sector - Setting operational standards - Activities monitoring in planning - Providing legal frameworks in finance and planning

	Vice Presidents Office, Minister of Environment, Director of Environment, Division of Environment, and NEMC,	- Coordination of the Environmental Management Policy, Act and guidelines - Environmental Monitoring and Auditing - Advise to the government on all environmental matters
		-
	Ministry of Lands and Human Settlement Development (Sector Environmental Section)	- Authority over the national land including the project area - Authority over national land resources - Enforce law and regulations in the area of influence of the project
	National Land Use Planning Commission	- Principal advisory organ of the government on all matters related to land use - Overseers of national land use
Regional Level	Regional Secretariat Regional Environmental Management Expert (REME)	- Advise the local authorities on matters relating to implementation and enforcement of EMA Cap 191 - Regional link with the Director of Environment under VPO
	Regional Land Advisory Committee	- overall supervision of all activities pertaining to land use in the respective in the region
	Dodoma Regional Secretariat Office	- Oversee and advise on implementation of national policies at regional level - Oversee enforcement of laws and regulations - Advice on the implementation of development projects and activities at the regional level.
Municipality Level	Municipal Director's Office	- Chief executive officer for all development activities within the municipality - Oversee and advice on implementation of national policies at municipal level - Oversee enforcement of laws and regulations - Advice on implementation of development projects and activities at municipality level.
	Municipal Natural Resources Department (forest and Wildlife divisions	- Plan and coordination of community based natural resources - Enforcement of laws and regulations - Overseer of rights to utilize resources in the municipality
	Land and Environment	- Land use planning - Environmental management - Land valuation and compensation procedures at the municipal level.

	Municipal Planning/Health/ Community Development Departments	- Baseline data on social and economic conditions - Extension services
	Municipal Engineer	- Overseer of engineering activities in the municipality
	Municipal Environmental Management Committee	- Resolving conflicts - Examine and inspect premises - Initiation of proceedings of civil nature against any person, company, department or institution that refuses to comply with any directive issued by the committee - Coordination of environmental matters at the municipal level
	Municipal Environmental Management Officer	- Coordination of environmental matters at the municipal level
	Capital Development Authority (CDA)	- Overseer of land matters in the Capital City
Ward Level	Wards Development Committees around the project site Ward Environmental Committee	- Oversee general development plans for ward level - Provide information on local conditions and extension services - Project monitoring in their area of jurisdiction
Sub ward level	Sub-ward 'Mtaa' Chairperson, Environmental Management Officer, Environmental Committee	- Oversee general development plans at sub ward "mtaa" level - Provide information on local conditions and extension services in the sub ward "mtaa" level - Project monitoring in their area of jurisdiction
b) Project Proponent		
Level	Institution	Roles and responsibilities
National level	National Bureau of Statistics (NBS)	- Facilitate EIA study - Compensation and resettlement arrangement (if any) - Project implementation, Project monitoring and internal monitoring and auditing
c) Affected Parties (Directly and indirectly affected) and interested parties		
Level	Private/Individuals	Roles and responsibilities
Community Level	Project Land users including those who were using the land for	- Land users for cultivation and livestock grazing

	cultivation and grazing	
National level	Public at large	- Users of statistical data
d) Utility Companies		
Level	Private	Roles and responsibilities
Regional level	✓ TANESCO ✓ DUWASA ✓ MUNICIPAL COUNCIL	- Providing services such as water supply, electric power supply, wastewater management, solid waste collection and disposal

5.2.2 Stakeholders Participation Process

Issues pertaining to construction of the new NBS office building project and its environmental and social consequences were aimed at representatives of the key stakeholders, interested institutions, utility companies and some of the owners of buildings in the municipality especially those around the project site. Constrained by poor response in attending public meetings, nature of the municipality dweller's business, consultants in consultation with the leaders decided to hold consultation meetings with representatives of the communities as means of getting public and stakeholders' views from both I&APs. In the course of public participation process, consultations targeted three main groups, the first category comprised of community leaders and owners of the existing buildings next the proposed site for the new NBS office building. The second category was specifically for administrative and service institutions including the Regional Commissioners Office, District Commissioners Office, Capital Development Authority, Dodoma Municipal Council, and utility companies such as DUWASA and TANESCO. These stakeholders were targeted so as to acquire their experience, challenges and problems they face during administering their duties

During consultations, proposed project background, site location, nature of the upcoming activities, associated construction activities in all phases of the project and the likely environmental and social impacts of the project were clearly presented.
From arrangement of consultation meetings to the actual process of consultations including collection of the responses from stakeholders took about two week's time from December 12th September through to 22nd September 2016 weekend days excluded. The list of stakeholders consulted is presented below.

5.3 Public Consultation Process

5.3.1 Introduction

Issues of the new NBS office building and its environmental and social consequences were indeed, required to be communicated to the stakeholders. This was very important particularly to those neighbours and those working on the project site especially those who were cultivating the land and grazing livestock.

The participatory approach started with consultation with the Ward Executive Officer of the ward where the proposed project site lies. These visitations included the offices of the Tambukareli ward.
During these visitations, it was agreed that based on work modalities of most city dwellers, it would be wise to hold the consultation meetings involving only

representatives of the people from Tambukareli ward. Tuesday mid-morning at 10:00 hours on 20th September 2016 was chosen to be appropriate day for such consultation.

Letter of introduction together with verbal invitation were given to Tambukareli Ward Executive Officer together with facilitation resources to allow invitations to reach all respective places in the ward. The copy of the letter of introduction to the ward executive office in order to participate in consultation meeting is attached under appendices.

5.3.2 Photographic records of public consultation Meetings

Figure 22: Consultation meeting showing the ward leaders in Tambukareli ward

Figure 23: First view showing stakeholders raising issues during public consultation meetings at Tambukareli ward offices

Figure 24: Second view showing stakeholders raising issues during public consultation meetings at Tambukareli ward offices

Since the proposed construction of a new NBS office building is likely to affect some communities socially and environmentally, it is anticipated that there will be significant impacts affecting various groups if they are not adequately informed. It is further anticipated that the communities will have to be protected from any negative impacts, while opportunities to be offered by the proposed project need to be made visible to the surrounding communities. Those various groups likely to be affected by the project were closely involved in raising their concerns of the project which are addressed in the subsequent sections of this report.

5.4 Synthesis of Results from Public Consultations

Public participation process followed the guidelines stipulated in the Environmental Management Act No. 20 of 2004, Part XIV regarding public participation in environmental decision-making for the proposed new NBS office building.
To facilitate an open and transparent process, representatives of those likely to be affected persons were identified, invited and later informed of the proposed project development and subsequent phases of office building operations. The meeting involved many representatives from Tambukareli ward. At least 23 people attended and participated fully in this consultation meeting through registration of their names and signatures together with the telephone contact numbers.

Presentation of the project and what was intended at NBS site was presented to the community. The importance of the project to the nation, at large as well as benefits to individual persons was equally presented. The positive impacts and negative impacts of the project and the corresponding mitigation measures were also described in details. Finally, at the end of the meeting, the communities were given an opportunity to ask questions, give comments, share experiences with similar projects, observations and opinions.

These comments, observations, questions, experiences, observations and opinions received from each person have been summarized and are addressed below.

5.4.1 Comments from the Regional Commissioner's Office

The Regional Administrative Secretary was met and she had the following to say;
The RC office welcomes all developers in the region and advised that all developers must contact CDA for all development requirements.

5.4.2 Comments from District Commissioners Office

Also, the DC was not in the office but the meeting was held with the District Administrative Secretary who commented the on the following issues

1. The main issue is to observe the requirements and laws of the land in construction activities
2. Consult the Capital Development Authority for any subject related to construction within the municipality. This authority is in place to oversee all the developments in the capital
3. In case anybody is stuck the office is open for all developers.

5.4.3 Comments from the Municipal Engineer

The important issues to observe in the municipality include

1. The project area should be fenced to isolate the project activities from outsiders
2. Construction materials shall be covered while on transit
3. All truck drivers hauling construction materials shall observe limitations of tonnage otherwise will be penalized
4. Fortunately there is no traffic jam in Dodoma, therefore there are no limitation schedules for transportation of construction materials
5. Environmental department is there in the municipality to take care of any environmental issues
6. Earth roads used for work shall be sprinkled with water to suppress dust.
7. Construction will automatically attract a lot of people therefore dust suppression is a must
8. Drawings for construction activities are all approved by CDA. Under CDA there is a Buildings Control Committee which passed the drawings. The Municipal Engineer is a member of the committee
9. After approval of the drawings, you will get the building permit and CDA will supervise the works. After completion of office construction, the project has to apply for the certificate of Occupancy. The Buildings Control Committee will come to inspect and issue the certificate of occupancy.
10. Utility companies have to be also consulted during installation of utilities and they are also part of the Buildings Control Committee. These include TANESCO, DUWASA, TTCL, and Fire Safety Department.
11. Sources of materials (borrow pits and quarries) are all owned by private operators with mining licenses issues by the Ministry of Energy and Minerals. Some pits are owned by village councils therefore the contracts have to be made by the respective villages and individual owners.

5.4.4 Comments and Response to Issues raised during Consultations in Tambukareli Ward

Table 28: Stakeholders Issues Consultants Response

s/n	Issue/ Concern raised	Response from Consultants
1	There are those who were cultivating the land and grazing in the area. Would the project proponent consider a compensation package to these care takers?	When one wants compensation, the requirements of the Land Act 1999 have to be met. Those who were there before were compensated and then the land was acquired for public use.
2	The basic question is that these people helped to keep the site clean for over 20 years and if they did not do that the project proponent would have incurred cost in clearing the area. Therefore what is asked for here is not compensation but a "hand-shake" with those care takers	The issue was received and recorded for consultation with the project proponent NBS.
3	The community's guess that the intention of the Project Proponent is to have good relationship with the neighbours and that is why this meeting is being held. Therefore there should be fair considerations to those who looked after the project area.	Comment noted and will be presented to the Project proponent.
4	The Clarification was further made by one of the sub ward chairman that in 1970 when the compensation was carried out when the land was appropriated. The Proponent did not start construction for all these years and the local community started cultivating the land. They have done so on every cropping season and this made the site remain clean over years and if it was not for these people the site would have been different. So the request is similar to what even the individual persons do to the locals when they are given land by CDA.	Comment noted
5	The request was made that the communities around should be given first priority in employment for both skilled and non skilled labour	Comment noted and will be passed on to the Proponent.
6.	The issue was raised that there might be illegitimate claims from those who were not cultivating the land.	This was clarified by the ward office that those who were growing crops are known
7.	A warning was signalled that the way back in 1973 when CDA took land, some of those who lost land were never compensated. The government should compensate people for the loss suffered	It must be noted that we gone through some changes over the years. The present Land Act No. 4 and No. 5 of 1999 require compensation not only for the developments on the land but also for the appropriated land. Land has value. This is opposed

		to the repealed Land Act. So any acquisition before 1999 must have followed the regulations in that Act.
8.	The request is not to compensate these people for land; the discussion is about paying those who kept the site in a tidy condition. If the proponent had built the security shed and employed a watch person, he would still pay for these security services. These would have been costs on the Proponent. But they were not there and these people did the good service	Comment noted
9.	There were no graves in the earmarked area but as you go further up the hill there are graves there.	Comment noted
10.	There being no other important issue it was requested that the four persons who were cultivating the land should accompany the leaders to identify the area they were cultivating.	Comment noted. The Proponent will get the list of those who were cultivating the land from the leaders.

5.4.5 Comments from CDA-buildings control Officer

The drawings for approval shall have the following qualities;

1. The scale of the drawings shall allow all the details to be seen clearly
2. Block plan should be presented in good scale to see all the details
3. Site plan should also be presented in a good scale
4. The drawings shall be accompanied by structural drawings with details
5. The Calculations shall also be submitted with the structural drawings

5.4.6 Comments from DUWASA

1. There is a sewerage system nearby, with a nominal bore of 250mm; therefore the connection to the central sewerage system must be straight forward.
2. There is adequate water supply but there is no enough head to convey the water to the 6th floor. Therefore there is a need for underground storage together with elevated storage tanks and pumps
3. Fire hydrants can suffice but the guidance shall be obtained from the Fire Department in the Municipality.
4. The project shall follow the procedures for water application. The requirements include the site plan, picture for individuals or the official rubber stamp in case of the government institutions.
5. All the fittings are bought by the project owner
6. Apply for water for works and on completion the water connection will be converted into a permanent connection during the operation phase of the building.

6. ASSESSMENT OF IMPACTS AND IDENTIFICATION OF ALTERNATIVES

6.1 Introduction

The proposed development of a new NBS office project in Dodoma will go through various phases, each stage, depending on the nature of activities involved, is likely to result into some social and environmental impacts to the locality. Therefore, the proposed development like any other development project in town premises, a number of minor to major environmental impacts are likely to occur from the planned activities ranging from site preparation through clearance of any unwanted overburden soils and any resulting debris followed by transportation of debris, transportation of building materials, erection, construction and operation of the NBS office building. Such activities are likely to result into potential environmental and social impacts as presented under this section.

6.2 Pre-construction Phase Impacts

6.2.1 Positive impacts

a) Creation of Employment Opportunities

Design and concept development of a multi-storey building create employment opportunities to various professionals directly or indirectly linked to the project. The proposed project during pre-construction phase will create employment to the following teams;

- Architectural teams for concept and design development,
- Environmental Engineering and Social Impact Studies teams to carry out Environmental and Social Impact Assessments.
- Economists and Quantity Surveyors to develop a project proposal and economic viability
- Surveying Teams to conduct the topographical survey
- Geotechnical investigations teams to determine the probable sub-surface characteristics such as stratification, hardness of the strata, level of groundwater table and evaluate the safe bearing capacity for the structure likely to be proposed.

6.2.2 Negative impacts

a) Vegetation clearance to accommodate new NBS office building. Presently the proposed sites has some vegetation that is natural and blend very well with the surroundings as shown on the pictures below. These few vegetations will be lost and thus loosing the familiar aesthetic view of the area.

Figure 25: Existing vegetation on the proposed site

b) Deterioration of familiar, scenic and visual quality

There is this notion that during site clearance the familiar visual quality will be lost to pave the way for the new office building. The proposed project site is located on a piece of land that is designated as suitable for government office activities under Dodoma Capital City Redevelopment Plan and will be consistent with the relevant provisions of the land use plans in the area around. The proposed project is proximal to the already existing multi-storey buildings including the Treasury Square under the Ministry of Finance, Controller and Auditor General and the National Health Insurance Fund (NHIF) in the background as shown below.

Figure 26: Some multi storey buildings under construction next to the site proposed for new NBS office building. In the foreground of the picture is the site for proposed office

6.3 Impacts during Construction Phase

6.3.1 Positive Impacts

a) Employment during Construction

Construction will create employment opportunities to the following staff directly or indirectly linked to the project.

- Supervising engineering team;
- Contractor's staff (managerial, skilled and unskilled labour force);
- Suppliers of plants, machinery, materials, and essential services;
- Construction monitoring personnel from various government agencies (Architects and Quantity Surveyors Registration Board, Engineers Registration Board, Contractors Registration Board, etc).

b) Improved Local Socio-economy

Construction of the new NBS office building will bring about, among other benefits listed during public consultations including the following socio-economic benefits.

- Employment of local workers during the construction phase of the project;
- Increased business opportunities around the project site due to the presence of project workforce during construction
- Increased or strengthening of local economy through the establishment of micro-enterprises such as food vending stalls and other necessities,

c) Improved Government Revenue through Collected Taxes

Construction materials to be purchased and services to be provided on the proposed project will all be subjected to the value added tax. This goes into the government coffers. Companies and employments will equally pay statutory contributions to the government (NSSF, PPF, VETA, etc). Overall, these are positive impacts of the proposed project.

6.3.2 Negative Impacts

a) Change of common land use, especially cultivation and grazing as noted on the pictures below – As of now the area is used for seasonal cultivation of the millet, maize, sunflower and water melons. Even though this area is used for agricultural and grazing activities, the proposed project site is located on a piece of land that is designated as suitable for office activities under Dodoma Capital Development land use master plan and will be consistent with the relevant provisions of the land use plans in the area around. The proposed project is proximal to the already existing multi-storey buildings for the Controller and Auditor General (CAG) , National Health Insurance Fund as shown on the right far end of the picture and north of the site there is a Convention Centre for Chama Cha Mapinduzi. Therefore the new office building will be blending well with existing office buildings.

Figure 27: Cultivation and livestock grazing in the area

b) Disturbances to historical and archaeological finds during site clearance

Based on the nature of the site it is possible that scientific, historical, or archaeological interest or anything of value during excavation may be encountered. Even though it is not expected to find this area to be of historical importance, but in case this happens and the contractor discovers such artefacts mitigation measures will be in place

c) Disturbance, particularly land scarring at borrow pits for construction materials (sand, aggregates, stones,) - Borrow materials to be used for construction of new NBS office building will be collected from sources far from the construction site. The immediate impact of borrow areas/sites is land scarring and leaving gaping holes and degraded land that cannot be used for other beneficial purposes.

d) Nuisance from noise and vibration during construction

Noise and vibration levels may increase during construction of the new NBS office building for example during piles driving. Also alternative sources of power such as standby generators and construction equipment such as front wheel loaders, excavators, pokers, grinders, cutters and compressors are likely to emit excessive noise during project development. Exposure to noise at work environment may cause a number of physiological and psychological responses. Noise can cause hearing loss, annoy and interfere with speech, interfere with concentration and thought processes, disturb sleep, cause fatigue and aggression, reduce immune response, lead to heart disease, to name a few effects of noise. Whole-body vibration can cause fatigue, insomnia, stomach problems, headache and "shakiness" shortly after or during exposure.

e) Increase in traffic levels to the surrounding area.

During construction there will be heavy duty vehicles that come to construction site to deliver various construction materials. This will increase the volume of vehicles in the routes linking the construction material sources and the site for the new NBS office building.

f) Contamination of water from leakages of fuels and lubricants from the construction equipment

g) Poor air quality from dust and emissions around the construction site and material hauling routes

The air quality around project areas may be affected by machinery due to exhaust emissions during clearing and excavation, transporting, placing, access road grading and compacting on the site. Dust is strongly considered as a source of respiratory disease but the extent of dust depends on the nature of the construction activity. Dust may emanate from haulage of materials thus impairing visibility among vehicle drivers, cyclists and pedestrians, or during materials offloading at the site of works. Also project facilities (e.g., electricity generation) and project activities (e.g., hammering/knocking and vehicular traffic) may have an impact on air quality,

Health effects – Vehicular and machinery air pollution contributes to a number of health issues and common diseases. It can increase a person's risk of cancer, impair the body's immune system and cause many respiratory problems. It is also commonly linked to asthma and is believed to be a contributor to birth defects.

h) Possible injuries to those passing by from falling objects – Even though the site is not located in residential areas, any unauthorised entry into the project area may have a detrimental impact to those entering the site of works as blocks, rocks and tools may fall.

i) Risk to Diseases Transmission

Potential socio-economic impacts resulting from an influx of job seekers into work place, including potential competition for resources and the delivery of social services, disruptions to social fabric, public health impacts such as the transmission of infectious diseases, HIV/AIDS and STDs, effects on women and economic impacts such as increase in price of goods.

Also the construction site will be a place of work where job seekers and other service providers such as food vendors commonly known as "Mama Lishe" will gather for work and services. Such gatherings will allow contacts that may go with unwanted activities but such contacts cannot be avoided.

j) Solid and Liquid Waste Generation

Solid and liquid waste will be generated from construction works mainly from site clearance of the project area and excavation of the overburden soils for disposal. Solid and liquid waste (e.g. hydrocarbons) can adversely impact the surface water, soil and air and can affect the soil use and the aesthetic beauty of the area.

k) Poor Health and Safety Risks - Increased risk to construction/project personnel, occupational hazards as result of poor instruction and/or poor awareness on safety regulations, ignorance of safety signs, warnings and reckless operations by personnel.

l) Oil, Grease, Fuel Spillage

Hydrocarbon spills around the construction site may come from construction equipment thus leading to contaminating water bodies that are used by the communities outside the project boundaries.

m) Soil Erosion -

During field investigations it was observed that the top soils in the project area are bare and loose likely to washed away towards the water bodies

Figure 28: Bare and loose soils observed during the site assessment

n) Increased potential for accidents –

Once construction activities have started there are chances that accidents may occur from over speeding to meet targeted milestones

6.4 Impacts during operation phase of the project

6.4.1 Positive impacts

a) Employment to maintenance and service companies

Once construction of the new office building is completed there will be employment to services companies that carry out cleaning, security and possibly catering.

b) Release of presently occupied office space to other users in Dar es Salaam

Relocation of NBS activities to a new office in Dodoma can be a blessing to those looking for office space in downtown Dar es Salaam.

6.4.2 Negative impacts of project during operation

a) Poor safety employees in the office building block

A multi storey building has many safety risks such as fire and earthquake during its operation phase. Therefore the new NBS office building will not be an exception to these risks.

b) Generation of Solid and Liquid Wastes

Office environment require materials such as paper for its activities to go on smoothly. At the same time some trashes will be made. Such trash need to be managed properly. Similarly the office employees will need to use water for washing in ablution units and once this water is used it requires safe handling. Otherwise it may result into spread of diseases.

6.5 Analysis of Alternatives to the Proposed Project

6.5.1 Introduction

The following section describes the alternatives of the proposed project. The EIA procedure requires that an environmental investigation needs to identify main project alternatives for the proposed development. Therefore, it is required under this section that a number of possible proposals and alternatives for accomplishing the same objectives be considered. In principle, these should include an analysis of the location, timing, input and design alternatives as well as the "do nothing" or "without the project" option.

6.5.2 Alternative Project Location

Before the decision of constructing a new NBS office building in Dodoma Municipality, there was a plan of constructing a new office building just behind the present NBS headquarters in Dar es Salaam. The plan of having a new office in downtown Dar es Salaam was overruled by the Government's directive that all government offices must be built in Dodoma where the government activities will all be based.

Following this directive, NBS approached Capital Development Authority in Dodoma to secure the land for the proposed office. The land secured for the development is next to other office buildings and it is according to the approved capital land use master plan. The earmarked land for development of a new NBS office building is proximal to the other existing government buildings including the Treasury Square, National Health Insurance Fund, Controller and Auditor General and Dodoma Convention Centre. The earmarked land is also next to the land portions proposed for offices of the following institutions; Planning Commission, Surface and Marine Transport Authority (SUMATRA), Ministry of Information and Culture, Prevention and Combating of Corruption Bureau (PCCB) and Dodoma Municipal Council.

Considering the location of all these other offices surrounding the area, it signifies that the choice of the location for NBS office matches with the other developed and upcoming features of the area.

In support of this project location, other areas away from the proposed site are planned for other activities; any effort to propose a new location would call for longer processes in terms of identification of the area, assessments for viability, valuation and corresponding compensations to those currently using the area. Also other new sites will be suffering from lack of abundant land required for government activities, ownership whereby any efforts to acquire it would call for compensations and additional costs resettlement. Also the master plan would be violated because the whole area under consideration is earmarked for government offices.

6.5.3 Alternatives Sources for Construction Materials

The new NBS office building is envisaged to be constructed from reinforced concrete whose raw materials will be sourced from common places such as Kigongwe Quarry for aggregates, Mtumba borrow areas for building sand and water from DUWASA water distribution lines. Alternatively water for construction works may be extracted from boreholes. However water from boreholes may suffer a grater disadvantage of salinity detrimental to the workability of cement compared to other surface water from DUWASA sources. Also during geotechnical investigations it was noted that the ground water table was below 15m that may lead into lesser ground water during pumping.

Cement may come from local retail sources dealing with bulk supplies or direct from TANGA (Simba Cement), Dar es Salaam (Twiga and Rhino Cement) Dangote Cement from Mtwara or Mbeya (Tembo Cement). Use of cement from these local sources is not envisaged to lead to the scarcity of the building material due to steady production of cement from these sources. Reinforcing bars may also be sourced locally from manufacturing industries or other outlets both in Dodoma and Dar es Salaam.

6.5.4 Alternatives to Construction Technology

The construction technologies can be considered in two forms namely; mechanized and labour based techniques.

Mechanisation of construction activities became necessary to replace labour which was becoming ever more expensive and scarce. However, in many third world countries labour is abundant and prepared to work for low wages. Moreover, construction equipment and some of the inputs needed to keep it working need be imported, diverting scarce foreign exchange from more vital purposes. In such circumstances it is not surprising that efforts began some twenty-five years ago to develop construction techniques more appropriate to the economic and social conditions in developing countries.

Labour-based techniques do not imply the complete elimination of machinery but rather selective replacement. Certain tasks, for example, long distance transportation of say overburden material or heavy pre-cast concrete structures, compaction of the concrete or lifting concrete to higher floors are better done mechanically by compactors and cranes respectively. Both of the latter have the advantage of being multi-use which is essential in the country where specialised equipment tends to be underused.

For other tasks, simple machines have been developed which can be used to save labour if wages or scarcity justify it.

Unfortunately, labour-based works have not had the success required. Changing a well-established technology requires a multi-level approach as well as the time to learn. It cannot be done piecemeal and hurriedly. Putting aside the profound shifts in attitude which must be induced, require extensive retraining of construction works managers and engineers and given the trend towards private sector involvement, technical and financial assistance to construction firms. These in turn can only survive if they can be guaranteed a steady flow of similar work, which can only be assured by a global approach.

Their relative simplicity permits decentralisation to local level management. However, again we are confronted with the need to train and supervise their implementation to ensure that the acquired knowledge will continue to be used after the project is over. Too often works have been carried out without adequate training and supervision and have been of poor quality. In other cases, managers and enterprises have been trained and equipped but could not continue subsequently to apply their skills and have found themselves unemployed or bankrupt or fail to utilize available natural resources for development.

Labour-based works can be introduced within a high level commitment to privatisation, decentralisation, employment creation and poverty alleviation. Labour-based works can be powerful policy instruments to support these objectives. However, without a real rather than rhetorical commitment of government and donors they will not realise their

potential. Therefore the construction technology will remain selective in terms of what the machines can do best and what the labour based can take.

6.5.5 The Do-Nothing Option

Under the No-Action Alternative, the NBS office building would not be constructed or operated, environmental and socio-economic impacts described in the previous section would not occur. The do-nothing alternative assumes that future developments would comply with the existing requirements for the project area, which includes increase in NBS employees with the consequential increase in demand for office space and decrease work efficiency. Pending the proposal of other significant development within the area, population growth and business development would likely continue on the same trend that currently exists. If the office building project were not constructed, the office space needs could continue to be secured through other means like renting office space. Renting in places like Dodoma may have a major handicap of limited space.

Delayed statistical reports production thus slowing the pace of development in other sectors would continue to a level that one cannot bear in the absence of more office space solutions. The socio-economic positive impacts such as temporary and permanent direct and indirect employments and revenue generated from purchase of construction materials would not be there.

Based on the assessment of issues, it is evident that the site in question is not located in any sensitive place. There would not be any significant loss of habitats for both common flora and fauna. The land is also vacant
Since the earmarked area is meant for government offices, and there are no other different activities other than government offices, there might be some localized impacts, but are not of sufficient importance to stop the proposed project. Accordingly, the consideration of do-nothing option can be justifiably dismissed as an alternative for the following reasons.

- Need and desirability of the project to avert the shortage of office space for the National Bureau of Statistics in a capital city of Tanzania.
- It is possible to encounter artefacts of cultural importance or archaeological chance finds but this will be handled as provided for in the Act No. 333 of 2002 whereby procedures for reporting, salvaging, handling and preservation or protection will be fully observed.
- The environmental impacts expected from the proposed project can be reasonably mitigated to acceptable and satisfactory standards and
- The potential environmental and social impacts will be much localized as the proposed office building will not lead to overshadowing of any residential property, will not lead into unacceptable interference with air traffic, television reception or wind speed at the ground level.
- Will not lead to unacceptable impact on the skyline or otherwise impinge on important icons/views

Eng. Venant RWENYAGIRA, the Environmental Expert seconds the recommendations that the proposed project on the proposed site should proceed on the conditions that proper planning is implemented and the project adheres to all proposed mitigation measures presented in section 7 of this statement. This precautionary approach will reduce the impacts on the socio-economic systems in the project area.

6.6 Analysis of Environmental and Social Impacts

An overview of the new NBS office project has been presented in Chapter 2. The potential impacts of the proposed project have been presented under section 6.3 above and summarized in Table 29 below. These impacts have been analysed into different categories based on the stakeholders' views and perceptions, the consultants experience in undertaking Environmental Impact Assessments and experience gained in other construction projects of the similar nature.
The approach used to assess the significance of the potential impacts and assess the effectiveness of the mitigation or enhancement measures is to apply significant ratings to each impact based on objective criteria, such as magnitude, extent and duration of that impact, to yield a final evaluation of the significance of impacts before and after mitigation.

Application of significance rating reduces the number of variables which need to be considered by the decision maker, whilst providing pertinent information about the implications of the proposed new office building project. The assessment criteria is given on Table 29 below

Table 29: First step assessment criteria for evaluation of impacts[1]

Assessment Criterion	Ratings
Effect	**Direct:** effect comes directly from activities at the project site **Indirect:** effect does not come directly activities at the project site, but from anther direct or indirect effect
Duration of Impact	**Short Term** (ST): 0-5 years; **Medium Term** (MT) 5-10 years; **Long Term** (LT): 15+ years
Reversibility	**Irreversible:** cannot recover from the impact over a reasonable amount of time **Reversible:** can recover from the impact over a reasonable amount of time
Extent or Spatial influence of Impact	Site Specific: Within the boundaries of the project site Local: within the local project impact area Regional/National/International: Beyond
Magnitude of Impact at the spatial scale	**High**: natural and/or social functions and/or processes are severely altered **Medium**: natural and /or social functions and /or processes are notably altered **Low**: natural and /or social functions and/or processes are negligibly or minimally altered

Source: Adopted from Brownlie and Willemse (1996)

Using this methodology, a continuum of significance can be derived with the two end points of the continuum being:

Table 30: Significance of Impacts

Least Significant	Most Significant
- Indirect	- Direct
- Site Specific	- Regional
- Low Magnitude	- High Magnitude
- Short-term	- Long-term
- Reversible	- Irreversible

Also other criteria considered to evaluate whether or not adverse impacts are significant include:

- environmental loss and deterioration;
- social impacts resulting directly or indirectly from environmental change;
- non-conformity with environmental standards, objectives and guidelines; and
- Likelihood and acceptability of risk.

Criteria to evaluate adverse impacts on natural resources, ecological functions or designated areas include:

- reductions in species diversity;
- depletion or fragmentation on plant and animal habitat;
- loss of threatened, rare or endangered species;
- Impairment of ecological integrity, resilience or health e.g.
    - disruption of food chains;
    - decline in species population;
    - Alterations in predator-prey relationships.

Criteria to evaluate the significance of adverse social impacts that result from biophysical changes include:

- threats to human health and safety e.g. from release of persistent and/or toxic chemicals;
- decline in commercially valuable or locally important species or resources e.g. fish, forests and farmland;
- loss of areas or environmental components that have cultural, recreational or aesthetic value;
- displacement of people e.g. by dams and reservoirs;
- disruption of communities by influx of a workforce e.g. during project construction; and
- Pressures on services, transportation and infrastructure.

Environmental standards, objectives and targets to evaluate significance include:

- prescribed limits on waste/emission discharges and/or concentrations;
- ambient air and water quality standards established by law or regulations;
- environmental objectives and targets contained in policy and strategy; and
- Approved or statutory plans that protect areas or allocate, zone or regulate the use of land and natural resources.

Sensitivity or Importance of Receptors

Receptors are considered as physical or biological resource or user group that would be affected. The baseline studies identified potential environmental receptors for each environmental element. Some receptors were more sensitive to certain environmental effects than others. The sensitivity or importance of a

receptor may depend, for example, on its frequency or extent of occurrence at an international, national, regional or local level.

Description of Effect

For each environmental element, the likely environmental effects were identified. Effects were either adverse or beneficial. Effects were divided into those confined to the construction phase and those occurring during operation of the new office building.

Significance of Effects

The magnitude of an effect does not necessarily directly relate to its significance since the significance of the effect depends on both its magnitude and the sensitivity or importance of the receptor. For example, a significant effect may arise as a result of a relatively modest effect on a resource of national value, or a large effect on a resource of local value. The significance of an effect would generally take into account the following criteria:

- extent and magnitude;
- duration (short-term and long-term);
- reversibility and irreversibility;
- performance against environmental quality standards; and
- Sensitivity or importance of the receptor.

Levels of significance that would be used in the assessment are, in descending order:

- Major;
- Moderate;
- Minor;
- Negligible.

Table 31: Analysis of Environmental and Social Impacts

Environmental and Social Impacts	Analysis of Environmental and Social Impacts													
	Effect				Duration			Reversibility		Extent or Spatial influence		Magnitude		
	Direct	Indirect	Primary	Secondary	Short term	Medium	Long term	Reversible	Irreversible	Local	Regional	Low	Medium	High
Pre Construction Phase														
Positive Impacts														
Creation of Employment Opportunities to professional design teams (Architects, Surveyors, Engineers,	✓		✓		✓						✓			
Negative Impacts														
Vegetation/greenery clearance to accommodate NBS office building will be carried out.	✓		✓			✓			✓	✓			✓	
Deterioration of familiar, scenic and visual quality		✓		✓			✓			✓			✓	
Construction Phase														
Positive Impacts														
Employment during construction	✓		✓		✓					✓			✓	
Improved local socio-economy	✓		✓		✓					✓			✓	
Improved government revenue through collected taxes	✓			✓	✓					✓			✓	
Negative Impacts														
Change of common land use, especially cultivation and grazing	✓			✓			✓		✓	✓		✓		
Possible to disturbances to historical and archaeological finds during site clearance	✓			✓			✓		✓	✓			✓	
Disturbance, particularly land scarring at borrow sites or sources of construction materials (sand, aggregates, stones,)	✓		✓			✓		✓			✓			✓
Nuisance from noise and vibration during construction	✓		✓		✓			✓		✓			✓	
Increase in traffic levels to the surrounding area.	✓		✓		✓			✓		✓			✓	

Environmental and Social Impacts	Analysis of Environmental and Social Impacts													
	Effect				Duration			Reversibility		Extent or Spatial influence		Magnitude		
	Direct	Indirect	Primary	Secondary	Short term	Medium	Long term	Reversible	Irreversible	Local	Regional	Low	Medium	High
Contamination of water from leakages of fuels and lubricants from the construction equipment	✓		✓		✓			✓		✓			✓	
Poor air quality from dust and emissions around the construction site and material hauling routes	✓		✓		✓			✓		✓		✓		
Possible injuries to those passing by from falling objects	✓		✓		✓			✓		✓		✓		
Solid and liquid waste generation	✓		✓		✓			✓		✓		✓		
Poor Health and Safety Risks -	✓		✓		✓			✓		✓		✓		
Oil, Grease, Fuel Spillage	✓		✓		✓			✓		✓		✓		
Soil Erosion -	✓		✓		✓			✓		✓		✓		
Risk to Diseases Transmission (HIV/AIDs, STIs or STDs)	✓		✓		✓			✓		✓		✓		
Increased potential for accidents	✓		✓		✓			✓		✓			✓	
Operation Phase														
Positive Impacts														
Employment to maintenance and service companies	✓		✓			✓		✓		✓			✓	
Release of presently occupied office space to other users in Dar es Salaam	✓		✓		✓			✓		✓		✓		
Negative Impacts														
Poor safety employees in the office building block	✓		✓		✓			✓		✓		✓		
Generation of Solid and Liquid Wastes	✓		✓		✓			✓		✓			✓	

Table 32: Impact Assessment Matrix

Impact / **Activities during project phases**	**Mobilization Phase**			**Construction Phase**					**Commissioning and Operation phase**			**Decommissioning Phase**				**Significant Impact Score**	**Rating**
Description of Impacts based on Project Environmental and Social Components	**Labour Force Hire**	**Transportation of construction Equipment**	**Camp Site establishment**	**Site Clearance**	**Access Road Construction**	**Camp Site construction**	**Construction of the building**	**Safe completion of office building**	**Hire and train operation staff**	**Building handing over**	**Office use**	**Hire of Demolition contractor**	**Demolition of unwanted structures**	**Reinstatement of surroundings**	**Laying off labour force**		
Pre-construction phase																	
POSITIVE IMPACTS																	
Creation of Employment Opportunities to professional design teams (Architects, Surveyors, Engineers, Geotechnical investigators)	+2	+1	+1	+2	+2	+1	+2	+1	+2	+1	+2	+2	+2	+2	-2	21	**H**
NEGATIVE IMPACTS																	
Vegetation/greenery clearance to accommodate NBS office building will be carried out.	0	0	-1	-2	-1	-1	-1	0	0	0	0	0	0	0	0	-6	**L**
Deterioration of familiar, scenic and visual quality	**0**	**0**	**-1**	**-1**	**-1**	**-1**	**-1**	**-1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-6**	**L**

Impact **Activities during project phases**	**Mobilization Phase**			**Construction Phase**					**Commissioning and Operation phase**			**Decommissioning Phase**				**Significant Impact**	
Description of Impacts based on Project Environmental and Social Components	**Labour Force Hire**	**Transportation of construction**	**Camp Site establishment**	**Site Clearance**	**Access Road Construction**	**Camp Site construction**	**Construction of the building**	**Safe completion of office building**	**Hire and train operation staff**	**Building handing over**	**Office use**	**Hire of Demolition contractor**	**Demolition of unwanted**	**Reinstatement of surroundings**	**Laying off labour force**		**Rating**
Construction Phase																	
POSITIVE IMPACTS																	
Employment during construction	+2	+1	+1	+2	+2	+1	+2	+1	+2	+1	+2	+2	+2	+2	-2	21	**H**
Improved local socio-economy	0	0	+1	0	+2	0	0	0	0	0	0	0	0	+1	0	4	**L**
Improved government revenue through collected taxes	0	0	+1	+1	+1	+1	+1	0	0	0	0	+2	+2	+2	-2	9	**M**
NEGATIVE IMPACTS																	
Change of common land use, especially cultivation and grazing	0	0	-1	-1	-1	-2	-2	-1	0	0	0	0	0	0	0	-8	M
Possible to disturbances to historical and archaeological finds during site clearance	**0**	**0**	**-1**	**-1**	**-1**	**-2**	**-2**	**-1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-8**	M
Disturbance, particularly land scarring at borrow sites or sources of construction materials (sand, aggregates, stones,)	0	0	-1	-1	-1	-1	-1	-1	0	0	0	0	0	0	0	-6	**L**
Nuisance from noise and vibration during construction	0	-1	-1	-1	-1	-1	-1	-1	0	-1	-1	0	-1	-1	0	-11	**M**
Increase in traffic levels to the surrounding area.	0	-1	-1	-1	-1	-1	-1	0	0	0	-1	0	-1	-1	0	-9	**M**
Contamination of water from leakages of fuels and lubricants from the construction equipment	0	-1	-1	-1	-1	-1	-1	0	0	-1	-1	0	-1	-1	0	-10	M

Impact / Activities during project phases	Mobilization Phase			Construction Phase					Commissioning and Operation phase			Decommissioning Phase				Significant Impact	Rating
Description of Impacts based on Project Environmental and Social Components	Labour Force Hire	Transportation of construction	Camp Site establishment	Site Clearance	Access Road Construction	Camp Site construction	Construction of the building	Completion of office building	Hire and train operation staff	Building handing over	Office use	Hire of Demolition contractor	Demolition of unwanted	Reinstatement of surroundings	Laying off labour force		
Construction phase Continued																	
Poor air quality from dust and emissions around the construction site and material hauling routes	0	-1	-1	-2	-1	-1	-1	0	0	0	-1	0	-2	-1	0	-11	M
Possible injuries to those passing by from falling objects	0	-1	-1	-1	-1	-1	-1	0	0	0	-1	0	-1	-1	0	-9	M
Solid and liquid waste generation	0	-1	-1	-1	-1	-1	-1	0	0	-1	-1	0	-1	-1	0	-10	M
Poor Health and Safety Risks -	0	-1	-1	-1	-1	-1	-1	0	0	0	-1	0	-1	-1	0	-9	M
Oil, Grease, Fuel Spillage	0	-1	-1	-1	-1	-1	-1	0	0	-1	-1	0	-1	-1	0	-10	M
Soil Erosion -	0	0	-1	-1	-1	-1	-1	-1	0	0	-1	0	-1	-1	0	-9	M
Risk to Diseases Transmission ((HIV/AIDs, STIs or STDs)	0	-1	-1	-1	-1	-1	-2	-1	-1	-1	-1	0	-1	-1	0	-13	M
Increased potential for accidents	0	-1	-1	-1	-1	-1	-2	-2	-1	-1	-1	-1	-1	-1	0	-15	H

Impact / Activities during project phases	Mobilization Phase			Construction Phase					Commissioning and Operation phase			Decommissioning Phase				Significant Impact	Rating
Description of Impacts based on Project Environmental and Social Components	Labour Force Hire	Transportation of construction	Camp Site establishment	Site Clearance	Access Road Construction	Camp Site construction	Construction of the building	Safe completion of office building	Hire and train operation staff	Building handing over	Office use	Hire of Demolition contractor	Demolition of unwanted	Reinstatement of surroundings	Laying off labour force		
Commissioning and Operation Phase																	
POSITIVE IMPACTS																	
Employment to maintenance and service companies	+1	+2	+2	+2	+1	+1	+2	+2	+2	+2	+2	0	0	0	0	19	H
Release of presently occupied office space to other users in Dar es Salaam	0	0	0	0	0	0	+2	+2	+2	+2	+2				0		
NEGATIVE IMPACTS																	
Poor safety of employees (Fire and Earthquake)	0	-1	-1	-1	-1	-1	-1	0	0	0	-1	0	-1	-1	0	-9	M
Generation of solid and liquid wastes	0	0	0	-2	-1	-1	-1	-1	0	0	-1	0	-1	-1	0	-9	M

Key

		Rating	
-2	Major - Very Severe Impact (unacceptable)	-21 to -15	High (H) on Unacceptable Negative Impact
-1	Moderate - Severe Impact	-14 to -8	Medium (M)
0	Not Applicable	-7 to -1	Low (L)
+1	Minor - Good Impact	1 to 7	Low (L)
+2	Negligible - Very Good Impact (Acceptable)	8 to 14	Medium (M)
		15 to 21	High (H) on Acceptable Positive Impact

7. ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES

7.1 Introduction

Construction industry and associated activities, the world over, generally cause some alteration to the bio-physical and social environment. The proposed new NBS Office building project is not an exception and will mainly involve land preparation through site clearance, overburden removal and transportation of the resulting unwanted soils and rubbish, excavation of trenches for receiving foundation ready to receive permanent structure, then construction of the actual structure followed by use of the building. The new NBS office building will be oriented to be used for intended purposes (offices and other associated services such as conference, printing and car parking services) by NBS staff and its visitors. In the previous section, the project proponent developed a thorough understanding of the scope of potential environmental and social impacts from the proposed office building, and therefore effective management strategies are presented in this section.

The mitigation measures for the impacts likely to be caused by proposed facilities will focus on key potential impacts identified in Section 6 according to the project phases as**;**

Pre-construction Phase Impacts

Positive impacts

a) Creation of Employment Opportunities to professional teams

Negative impacts

a) Vegetation/greenery clearance to accommodate NBS office building
b) Deterioration of familiar, scenic and visual quality

Construction Phase

Positive Impacts

a) Employment during Construction
b) Improved Local Socio-economy
c) Improved Government Revenue through Collected Taxes

Negative Impacts

a) Change of common land use, especially cultivation and grazing
b) Possible to disturbances to historical and archaeological finds during site clearance
c) Disturbance, particularly land scarring at borrow sites or sources of construction materials (sand, aggregates, stones,)
d) Nuisance from noise and vibration during construction
e) Increase in traffic levels to the surrounding area.
f) Contamination of water from leakages of fuels and lubricants from the construction equipment
g) Poor air quality from dust and emissions around the construction site and material hauling routes
h) Possible injuries to those passing by from falling objects
i) Solid and Liquid Waste Generation
j) Poor health and safety and associated risk
k) Oil, Grease, Fuel Spillages
l) Soil erosion
m) Risk to diseases transmission (HIV/AIDs, STIs or STDs)

Operation Phase

Positive Impacts

a. Employment to maintenance and service companies
b. Release of presently occupied office space to other users

Negative Impacts

a) Poor safety of employees in the office building block due to fire and earthquake
b) Generation of solid and liquid wastes

7.2 Negative Impacts and Corresponding Mitigation Measures

7.2.1 Pre-construction phase Impacts

Table 33: Mitigation Measures during pre-construction phase

Impact	Mitigation measures
Vegetation clearance to accommodate new NBS office	- Engineering investigations and surveys will be limited to very small areas meant for receiving permanent works of the project. - In disturbed areas, tree replanting will be carried out. - Vegetation clearance will be limited to the area necessary for permanent works) some trees on the edge shall be left intact - The proposed area has some trees in form of scattered bushes; these will be easily replaced with other small decorative and environmentally friendly trees.
Deterioration of familiar, scenic and visual quality	- The appearance of the proposed new office building will be made consistent with other newly built offices including ACG, NHIF and the Treasury Square in the project area. The proposed building structure will be similar to those located around the site and slightly higher about 5 storeys than the Dodoma Convention Centre. However this height will not lead to overshadowing of any residential property, will not lead into unacceptable interference with air traffic, television reception or wind speed at the ground level. - Will not lead to unacceptable impact on the skyline or otherwise impinge on important icons/views - Landscaping will be undertaken to match the existing and in accordance with EMP.

7.2.2 Construction Phase Impacts

Table 34: Mitigation measures during Construction phase

Impact	Mitigation Measure
Change of common and familiar land use, especially cultivation and grazing by local communities	- No mitigation measure required. The change of land use is according to the Capital Development land use plan therefore the previous activities of cultivation and grazing are not approved

Possible to disturbances to historical and archaeological finds during site clearance	- Notify the Engineer giving the nature and location of the findings. The Engineer will consult the National Museum. - The Contractor shall exercise necessary care so as not to damage artefacts or fossils uncovered during excavation operations and shall provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the employer. - Where appropriate by reason of a discovery, the Engineer shall order delays in the time of performance or changes in the work, or both. If such delays, or changes or both are ordered, the time of performance and contract price shall be adjusted in accordance with the applicable clauses in the general Conditions of Contract.
Disturbance, particularly land scarring at borrow sites or sources of construction materials (sand, aggregates, stones,)	- All borrow areas are privately owned, the Project Proponent will be buying the construction materials and thus contributing towards restoration of the borrow sites - Part of the charges for purchase of construction materials shall be channelled back for the rehabilitation or reinstatement of the borrow areas. - Since both borrow and quarry sites are privately managed, the project proponent will not have any mandate on the borrow sites and quarry site
Nuisance from noise and vibration during construction	- Use of properly serviced and well maintained equipment - Silencers (mufflers) to be used to minimize noise on otherwise noisy equipment such as generators and compressors - Sensitization of the adjacent communities on likely vibrations and increased noise resulting from construction activities - Where noise levels will be beyond 85dB(A), ear muffs and plugs shall be provided to all those working within the area with high noise levels - The site for noisy equipment such as compressors will be located away from possible noise receptors such as offices - Use of noise attenuation shields after studying the noise levels in the project premises
Increase in traffic levels to the surrounding area.	- Only essential traffic will be allowed to the project area - Sensitization of the nearby communities about the increased traffic - Traffic jam does not seem to be a problem in Dodoma. If the need arises during parliament sessions, for example, then materials hauling to site may be carried out during off peak periods during the day or at night from a stockpiling area. - Alternatively finished materials such ready-made concrete, pre-cast elements or pre-assembled materials can be delivered at site when the need arises.
Contamination of water from leakages of fuels and lubricants from construction equipment	- Dripping pans to be used to contain all hydrocarbon leakages on construction equipment - Refuelling on designated areas - In case of hydrocarbon spills, the contaminated soils will be collected and treated to remove the hydrocarbon and prevent the hydrocarbons from being washed away in storm water to the nearby sea.
Poor air quality from dust and emissions around the	- Water sprinkling to reduce the dust at construction site, - Use of dusk masks to operators and those working in dusty areas.

construction site and material hauling routes	- Use of protective goggles for operators - Construction machines/equipments shall be well maintained to ensure complete fuel combustion. All the vehicles shall be frequently checked and serviced during the whole construction period so that the level of exhaust emissions is reduced - Movement of contractor's vehicles should be kept to minimum necessary for the job. However, the contractor will arrange and haul construction materials and equipments during hours that are not interfering with other activities in Dodoma town - Speed limit to vehicles hauling materials especially in settlements shall be 40km/hr and even less in the Central Business District. - Debris being hauled for disposal and construction materials to site of works shall be covered with tarpaulins
Possible injuries to those passing by from falling objects	- The construction site will be isolated from outsiders by construction of a temporary fence - Site shall be provided with the safety screen to protect neighbours from flying debris - Barrier canopies will be extended to match the protection requirement
Solid waste and liquid waste generation	- Site housekeeping to minimise solid and liquid wastes generated from construction and other related activities such as food vending and petty businesses - Allocate a special area for petty business such as food stalls provided with garbage bins - Post appropriate signage such as "DO NOT LITTER" or "USITUPE TAKA" at all strategic sites. - Assign Contractor's Environmental or Safety Officer the responsibility to ensure that the surroundings are kept clean. - All excavated overburden should be well managed through levelling or tipped into borrow areas which are no longer useful. - Trash and waste shall be well collected and removed from the site to municipal sanitary land fill. - Consult the Municipal Council about the suitable trash/waste dumping site - The community should instruct people to stay away from scavenging at dumping sites - Solid wastes generated from clearing and excavation of overburden will be collected and disposed off in municipal sanitary land fill or any other suitable place directed by the CDA supervisors. - Decomposable materials will be collected and combined with capital wastes to the municipal sanitary landfill; plastics and other recyclable materials will be collected and sent out for recycling.
Oil, grease, fuel spillage	- Dripping pans to be used to contain all hydrocarbon leakages on construction equipment - Refuelling on designated areas - In case of hydrocarbon spills, the contaminated soils will be collected and treated to remove the hydrocarbon and prevent the hydrocarbons from being washed away in storm water to the nearby sea.
Poor occupational health and safety and associated	- In places where there are heavy vehicles transporting construction materials and turning places, appropriate warning signage (e.g. speed

risks	limit) will be posted. - In case the exercise (material haulage) happened to take place during daytime drivers shall be warned to take precaution in town centre particularly in busy and congested areas. - Visitors and neighbours around the project area and public in general will be informed of what is going on at the site through properly erected signs - Job seekers will be guided accordingly and if there is no work those not employed will be instructed people to stay away from the construction site and give way to the construction equipment.
Poor health and safety and associated risk	- All employees working on the project will be sensitized to use Personal Protective Equipment (PPE) when at work to avoid occupational risks. Such equipment include hard hats, ear plugs or ear muffs, dust coats or overalls, gloves, dust masks, goggles for eye protection, hard toed boots etc. - Sensitization and health awareness campaigns to all involved in the project including service providers - Construction workers to undergo health screening according to the National HIV/AIDs Policy, - To reduce the spread of STDs and HIV/AIDS there will be sensitization programs for workers and local community. Community leaders will be sensitised to cooperate with the contractor for success of this program - Project will assist the nearby health facility in sensitization of those involved in a project - Injuries and health problems associated with construction activities will be reduced through the implementation of the workers health, safety and first aid training programs. - Worker's health and safety will be monitored through an occupational injury and illness reporting program, accident and near-misses reporting and investigation protocols.
Soil Erosion	- Earthworks for major construction activities on site shall be carried out during the dry season to prevent soil from being washed away. - Implementation of erosion control measures on disturbed surfaces such as planting vegetation that hold soils together, terracing in steep slopes and securing the available vegetated area (surfaces not required for works shall not be disturbed) - the contractor shall use geo-textile to cover disturbed surfaces and secure bare soils
Risks to transmission of diseases (HIV/AIDs, STIs or STDs)	- Medical examination for newly recruited employees and periodic health examination of workers and treatment will be established to prevent epidemics in the construction site and possible transmission of communicable diseases including HIV/AIDs from workers to local population and vice versa as provided for in the National HIV/AIDS policy. - A nearby health centre/dispensary should be assisted by the Contractor to provide health education, preventive health care and primary treatment of ailments and infectious diseases. - HIV/AIDs sensitization programme shall be undertaken by the contractor to his workmen and nearby residents.

Increased potential for accidents	- Institute rumbling strips, ramps and traffic management guide. - Proper signage during construction will be required and the construction site will be fenced to reduce interaction with neighbourhoods. - Sensitize contractor's drivers and sub-contractors to observe traffic rules through an incentive scheme to be organized during toolbox meetings with construction staff.

7.2.3 Operation Phase Impacts

Table 35: Mitigation measures during operation

Impact	Mitigation Measure
Poor safety employees in the office block against fire and earthquake	- Safety of employees from fire will be ensured through installation of fire-fighting equipment in the building. These will include portable fire extinguishers, provision of dry risers for fire fighting on the ground floor. - Safety to be ensured through fire escape to be provided on both sides of the proposed building. - Security will be ensured through controlled entry and exit of all staff and guests and vehicles. However, security camera will be supplied to appropriate locations. In addition, specialised security companies will be engaged to provide security for the parking block. - Sensitization of the employees of the actions to take during tremors and earthquakes - Engineering design has considered safety factors against earthquake
Generation of solid and liquid wastes	- Paper materials and other biodegradables shall be regularly collected and disposed off at municipal sanitary land fill - E-waste such as computer, cartridges, photocopiers, monitors, television sets, etc, shall be collected and sent to major recycling centres in Dodoma or Dare s Salaam

7.3 Positive Impacts and Enhancement Measures

The significant positive impacts expected from the design and construction phase of the proposed new NBS office building

- Improved aesthetic beauty of the project area which was used for agricultural and grazing activities
- Improved local socio-economy
- Creation of employment opportunities
- Improved government revenue in the form of taxes

7.3.1 Aesthetic Enhancement

Visual quality of the area will improve significantly because the agricultural and grazing activities will be replaced by a multi-storey building thus changing the skyline of the area under consideration. This will equally be matching the buildings that are now erected. Therefore, to enhance the hopes and wishes of some of the local community, an environmental permit to the project will be the only "way out"

7.3.2 Improved local socio-economy

Some stakeholders acknowledged that the new office building project will contribute to the value and investment opportunities in the Capital City of Dodoma. Some stakeholders felt that the construction of the office building will bring about, among other benefits listed during public consultations, the following socio-economic benefits.

- Employment of local workers during the construction phase of the project;
- Increased business opportunities around the project site due to the presence of project workforce during construction and also during operation of the office building.
- Increased or strengthening of local economy through the establishment of micro-enterprises such as office cleaning, catering, foodstuff sales and other necessities;

In totality, it is anticipated that the project will increase office space to NBS and thus concentrating the activities of the National Bureau of Statistics at one location under one roof. Also releasing office space in downtown Dar es Salaam will benefit those who have been looking for office space.

7.3.3 Creation of Employment Opportunities

Construction and development projects, the world-over, create employment opportunities for all cadres of staff directly or indirectly linked to the project. The proposed new NBS office building project, upon receipt of respective permits and implementation will have directly employed as a minimum, the following groups;

- Project concept developers;
- Environmental Impact Assessment experts;
- Geotechnical investigations teams
- Designs teams in preliminary and detailed architectural and engineering designs;
- Supervising engineering team;
- Contractor staff (managerial, skilled and unskilled labour force)
- Suppliers of plants, machinery, materials, and essential services
- Construction monitoring personnel from various government agencies

7.3.4 Improved Government Revenue in Terms of Taxes

Material to be purchased and services to be provided on the proposed project will all be subjected to the value added tax. This goes into the government coffers. Companies and employments will equally give statutory contributions to the government. Overall, this is a positive impact from the proposed project that require enhancement through respective environmental permit upon submission of this Environmental Impact Assessment.

8. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

8.1 Introduction

The objectives of this Environmental and Social Management Plan (ESMP) are to describe;

- ✓ the legislative and administrative frameworks in the country on Environmental Impact Assessment Management,
- ✓ implementation arrangements for the ESMP,
- ✓ the environmental monitoring programme and reporting arrangements and
- ✓ Design consideration regarding environmental, health, safety and social impacts.

In Tanzania the Environmental Assessment framework is guided by the following two key national legislations:

- The Environmental Management Act (EMA) Cap 191 (No. 4 of 2004)
- The Environmental Impact Assessment and Audit Regulations, 2005

Environmental Impact Assessment of the new NBS office building is administered under the Vice Presidents' Office, where the Minister of Environment falls. The environmental assessments for the proposed development of new office building project, the administrators are:

- Minister of Environment who approves the EIA and gives the environmental permit,
- NEMC, who arranges for EIAs, undertakes enforcement, compliance, review and monitoring of EIA.

8.2 Implementation Arrangement of the EMP

The project proponent and the executing agency of the proposed new office project is the National Bureau of Statistics (NBS) to be assisted by the lead consultant, the Project Architect and other sectoral consultants in engaging the project Contractor and Sub-contractors in the implementation of the office building project. To minimize potential environmental and social negative impacts, the project will require the support of various institutions in the project area. The Table No. 36 below outlines the actions of the ESMP. The organizational framework for the EMP is designed to evolve as the project progresses through detailed engineering design, construction and operation phases.

8.3 Reporting Arrangements

Sector Ministry Environmental Section (Sector Environmental Coordinator), the NBS and Consultant's Appointee to deal with Environmental Management will cooperate with other experts in Dodoma Municipality such as Municipal Environmental Management Officer to provide the Regional Environmental Management Expert (REME) under the Regional Secretariat with environmental reports of the project implementation as part of the progress reports and annual environmental monitoring reports. The Regional Environmental Management Expert is the link between the region and the Sector Ministry Environmental Section (Sector Environmental Coordinator) and the Director of Environment as well as the Director General of NEMC.

8.4 Cost estimates for ESMP

The costs for implementing the mitigation measures have been estimated based on previous projects and engineering judgment. The actual costs will be presented by the successful contractors during bidding exercise. The priced bills of quantities for environmental and social impact mitigation measures shall be made part of the contract for these mitigation measures to be effective.

Table 36: Environmental and Social Management Plan

Environmental and Social Management Plan Pre-construction, Construction and Operation Phases							
Impact	**Management Measures**	**Responsible for mitigation**	**Time Frame**	**Target level / standard**	**Reporting to**	**Estimated Cost (USD)**	**Remarks**
Pre-construction Stage							
Vegetation clearance	- Vegetation clearance limited to the area for permanent works) some trees on the edge shall be left intact - Replace with other flower pots on parapet walls on each level of the new building. - Replace with other small decorative and environmentally friendly trees.	Contractor / Supervising Engineer	On completion of building	Greenery area at completio n	Municipal Natural Resources Offices	3,500	
Deteriorati on of original land use, scenic and visual quality	- Match proposed NBS office building with the existing buildings - Landscape to match the existing surroundings.	Lead Architect assisted by supervising Engineer / Contractor	During detailed Engineering design of the project	Design provides for blending with existing	Municipal Architect	3,000	
Construction Stage							
Change of common land use, especially cultivation and grazing	- Landscape to Match the surroundings	Lead Architect assisted by supervising Engineer / Contractor	After completion of the constructio n / during landscaping		CDA Environment al Management Officer	2,000	
Disturbanc e, and land scarring at borrow	- Use materials from existing borrow sites - Contribute towards restoration of the borrow sites - Part of the charges for purchase of	Project contractor	During procuremen t of constructio		Municipal Mine officer / Natural Resources	7,500	

sites	construction materials shall channelled back for the rehabilitation or reinstatement of the borrow areas.		n materials		officer		
Nuisance from noise and vibration During constructio n	- Use of well serviced and well maintained equipment - Use silencers (mufflers) on noisy equipment such as generators and compressors - Sensitization of the employees on vibrations and increased noise from construction activities - Where noise levels will be beyond 85dB(A), ear muffs and plugs shall be provided to all those working within those noisy areas area - Relocate noisy equipment away from noise receptors such as offices	Supervising Engineer/ Contractor	Daily during constructio n	Noise< 60 dB(A)	OSHA	2,000	
Increase in traffic levels	- Allow only essential traffic to project area - Sensitization of communities about the increased traffic - Materials hauling to tipping site and vice versa will be carried out during off peak periods during the day or at night. - Alternatively finished materials such ready-made concrete, pre-cast elements or pre-assembled materials can be delivered at site when the need arises. - Introduce traffic management plan near the project site	Project Contractor/ NBS			Traffic Police	1,000	
Water/soil contaminat	- Use dripping pans to contain all hydrocarbon leakages on construction	Supervising Engineer	Daily during	10 mg/l (TZS	Municipal Health	2,500	

ion from leakages of fuels and lubricants	equipment - Refuelling on designated areas - Remove contaminated soils and treat to remove the hydrocarbon - Carry out proper service for all machineries to stop leakage (lubricants and fuels) - No machine re-fuelling shall be carried out within 100 m of the water source.	and Contractor	constructio n of a car park facility	860:2005)	Officer/ Municipal Environment al Management Officer		
Poor Air Quality (dust and emissions)	- Water sprinkling, - Use of dusk masks to operators - Use of goggles for operators - Construction machines/equipments shall be well maintained to ensure total fuel combustion. - Movement of vehicles should be kept to minimum necessary for the job - Cover construction materials with tarpaulins	Contractor and Supervising Engineer	Twice a week during project constructio n	Air Quality as per TZS983:20 07	OSHA, CRB and ERB	3,500	
Possible injuries to those passing by from falling objects	- Provide site with the safety screen to protect neighbours - Sensitize employees on securing tools and equipment	Project contractor	Daily on site	No injuries	OSHA	5,000	
Solid and liquid waste generation	- Site housekeeping - Allocate a special area for petty business - Post appropriate signage such as "DO NOT LITTER" or "USITUPE TAKA" to at all strategic sites. - Assign Contractor's Environmental or Safety Officer the responsibility to	Contractor and supervising engineer	Daily during constructio n	No trash/litter around	Municipal Health Officer	5,000	

	ensure that the surroundings are kept clean. - All excavated spoil should be well managed through levelling or tipped into borrow areas which are no longer useful. - Trash and waste well collected and removed from the site - The sensitize community against scavenging at dumping sites - Decomposable materials will be collected and combined with city wastes to the appropriate sanitary landfill; plastics and other recyclable materials will be collected and sent out for recycling.						
Poor Health and Safety and associated risks	- Start workers health, safety and First Aid training programs. - Occupational injury and illness reporting program, accident and near-misses reporting and investigation protocols.	Supervising Consultant and Contractor	Once a month during constructio n	Zero incidents	OSHA, ERB and CRB	10,000	
Spread of diseases (HIV/AIDs, STIs or STDs	- Sensitization and health awareness campaigns to all involved in the project including service providers - Construction workers to undergo health screening according to the National HIV/AIDs Policy, - Project will assist the nearby health facility in sensitization of those involved in a project	Contractor	Once a month for 2 years	Minimised cases	MACC (Municipal Aids Control coordinator	50,000	
Increased potential	- Institute rumbling strips, ramps and	Contractor and	Daily during	Zero accidents	Supervising Engineer-	7,500	

for accidents	traffic management guide. - Proper signage during construction will be required and the construction site will be fenced to reduce interaction with neighbourhoods. - Sensitize contractor's drivers and sub-contractors to observe traffic rules through an incentive scheme to be organized during toolbox meetings with construction staff.	supervising Engineer Contractor's HSE Officer to prepare sensitization Meetings for all employees	constructio n		Reporting to OSHA in case of accidents		
Impact	**Management Measures**	**Responsible for mitigation**	**Time Frame**	**Target level / standard**	**Reporting to**	**Estimated Cost (USD)**	**Remarks**

Operation Phase							
Poor safety of employees in the office against fire and earthquake	- Install fire-fighting equipment in the building and train staff on how to use such fire fighting equipments. - Provision of fire escape on both sides of the proposed building - Conduct fire drills among employees - Controlled entry and exit of all vehicles and people. - Installation of security camera at appropriate locations. - Hiring specialised security companies to provide security for the parking block. - Sensitize the employees to be on a state of alertness ready to confront earthquakes - Engineering design has considered safety factors against earthquake	Contractor facilitated by NBS	During project commissioning Once a year during building operation	Zero incidents	Fire Department	50,000	Annual Budget
Generation of solid and liquid wastes	- Paper materials and other biodegradables shall be regularly collected and disposed off at municipal sanitary land fill - E-waste such as computer, cartridges, photocopiers, monitors, television sets, etc, shall be collected and sent to recycling centres in Dodoma or Dare s Salaam	NBS Contractors	Daily during operation	Good housekeeping	Municipal Environmental Management Officer	50,000	Annual Budget
						207,500	

9. ENVIRONMENTAL AND SOCIAL MONITORING PLAN

9.1 Introduction

Monitoring is the long term process that should begin at the start of the project and continue throughout the life of the project. Its purpose is to establish benchmarks so that the nature and magnitude of anticipated environmental impacts are continually assessed. Monitoring involves the continuous or periodic review of mitigation activities to determine their effectiveness. Consequently, trends in environmental degradation or recovery can be established and previously unforeseen impacts can be identified and dealt with during the new NBS office building project life.
Environmental audits are also usually carried out some few years after completion of the project. These audits assess the relevance, efficiency and impact of any mitigation measures administered. NBS may initiate such audit processes to cover all its projects activities.

The new NBS office building contractor should prepare an Environmental and Social Monitoring Plan which will cover the mobilization and construction phases of the project. Tasks to be covered and monitored during each phase are presented below.

Monitoring during Pre-construction phase

- If appointment of the Health, Safety and Environment (HSE) Officer is done and carries out his/her responsibility.
- If maintenance and checking of construction equipment ready for work at site and during the actual works;
- If training and sensitization of the staff on safety and environmental issues is carried out;
- If HIV/AIDS sensitization campaign have been carried out;

Construction phase

- If mitigation measures for the impacts identified are implemented;
- HIV/AIDs sensitization campaign is done
- Occupational health and safety measures (conditions at materials storage places, borrow sites, equipment, personal protective equipment (PPE), etc,) are implemented. Data collection and analysis of baseline data on air and water quality, noise levels and socio-economic aspects as indicated in the EIA study are carried out

9.2 Environmental and Social Monitoring During Operation

NBS or though its Property Management Agent will be responsible for monitoring of environmental and social impacts after construction and handing over of the office building to project to the project proponent. The Environmental Specialist at the Dodoma Municipal Office together with the Municipal Land Officer can be in-charge of the environmental and social monitoring of issues related with the office building if it is meeting all the statutory requirements.

Among other things, the appointed Municipal Environmental Management Officer should deal with

- monitoring surface water pollution from various pollutants from construction equipment such as oil spills; monitoring if interceptors are functioning as required

- environmental degradation control measures;
- risk to fire outbreak within the office building;
- noise pollution;
- changes in socio-economic status; and
- NBS staff and visitor's car parking services with respect to environmental problems

9.3 Environmental and Social Monitoring Plan and Cost of Monitoring

Table 37: Environmental and Social Monitoring Plan

Project Phase - Pre-construction					
Impact	**Parameters to be monitored**	**Monitoring Frequency**	**Responsible for monitoring**	**Parameter / Target Level**	**Estimated Cost (USD)**
Vegetation loss through clearance	Plans are according to statutory requirements	Once before construction during issuance of building permit	Local Authority Municipal Land Officer, Municipal Engineer	Vegetation loss Target -necessary for permanent works	500
Deterioration of original and familiar scenic and visual quality	Plans are according to statutory requirements	Once before construction during issuance of building permit	Local Authority Municipal Land Officer	Landscaping to match existing surroundings	500
Construction Phase					
Change of common land use (cultivation and grazing)	Amicable resolve of land use issue with communities	Once before start of construction	NBS designate to deal with environmental management	No complaints on land use issue	500
Disturbance, land scarring at borrow sites for construction materials	Ensure materials are from regular borrow sites	Once during construction material purchasing for haulage to site	Municipal Environmental Management Officer	Materials sourced from operating sites	1,000
Nuisance from Noise and vibration	Registered complaints and noise and vibration levels	Once a month	OSHA	Noise< 60 dB(A)	2,000
Increase in traffic levels and associated risks	Incidents / injuries from accidents	Daily during construction	Traffic officer	Ordinary traffic level	500
Contamination of water from	Monitor soundness	Once a week during	NBS designate to deal with	Ensure no leakages and	700

leakages of fuels and lubricants from equipment	of equipment	construction	environment	spills	
Poor Air quality	Nuisance dust and smoke Mitigation measures	Once a month for six months	Municipal Environmental/ Health Officer	Air Quality as per TZS983:2007 (E)	1,200
Possible injuries to those passing by and neighbours from falling objects	Ensure protective screen and extended canopy is in place	Once a month during construction	Municipal Health Officer /OSHA	Zero injuries next to site	2,000
Solid and liquid waste generation	Monitor removal of wastes from construction sites	Weekly during construction	Municipal Environmental Officer	Collection of waste and trash- Ensure tidy environments	2,000
Poor health and safety and associated risks	Monitor use of PPE Monitor use of tagging and signage	Weekly	Resident Engineer NBS Designate	Use of PPE Target – all use PPE all places needing tags are	600
Oil grease and fuel leakage from equipment	Monitor soundness of equipment	Once a week during construction	Municipal Health Officer OSHA	Ensure no leakages and spills	2,000
Increased potential for accidents and construction hazards	Traffic education Complaints of unsafe vehicle operation by local inhabitants and	Daily during construction	Municipal Engineer / Traffic Police	Over speeding and reckless driving Target – minimum or zero incidents	3,000
Safety during construction and Safety Hazard at work place	Monitor use of PPE Monitor use of tagging and signage	Weekly	Occupational Health Officer (OSHA)/CRB and ERB	Use of PPE Target – all use PPE all places needing tags are	1,300
Soil erosion	Erosion control measures in place	Once a month during construction	Resident Engineer	No soil erosion	5,000
Risk to disease transmission during	Monitor pre-employment	Once a month for 6 months	Municipal Health Officer? NGO /	Employees screening	1,200

construction	testing, sensitization (HIV/AIDS) education and treatment programmes		Municipal Aids Control Coordinator (MACC)	Target – Every employee screened and treated for ailments	
Operation Phase					
Poor safety and security of staff in office building against fire and earthquake	Register complaints and incidents at the property manager office	Once a month for 12 months	Police officer	Zero cases	6,000
Generation of solid and liquid wastes during operation phase	Monitor removal of wastes from offices	Once a week during operation		Collection of wastes Ensure tidy office environments	5,200
			Total Monitoring Cost (USD)		33,200

10. RESOURCE EVALUATION / COST BENEFIT ANALYSIS

10.1 Introduction

Cost Benefit Analysis is a tool used either to rank projects or to choose the most appropriate option. The ranking or decision is based on the expected economic costs and benefits. The general rule is that the project should be undertaken if lifetime expected benefits exceed all expected costs.

The aim of Environmental Cost Benefit Analysis (ECBA) is to present the lifetime costs and benefits of a project as a single number that can be compared to either the interest rate prevailing or the costs and benefits of environment. To get this indication, the stream of net benefits (benefits minus costs) is discounted.

The process of conducting the environmental cost benefit analysis involves

- Description of the project and corresponding capital costs.
- Identification of the project consequences in time frame order and obtain their monetary values.
- Determination of the type of Environmental Cost Benefit Analysis

In the following sections, the environmental cost benefit analysis of the new NBS office building project is presented.

10.2 Environmental and Social Costs

The project negative impacts during construction and operation of the office building were presented under Section 6. In estimating the costs for each of the impacts, various known environmental and social costs valuation techniques were considered each with its advantages and disadvantages as presented below;

1. Market Price Method – This technique estimates economic values for ecosystem products or services that are bought and sold in commercial markets. However, the market price method does not deduct the market value of other resources used to bring ecosystem products to market, and thus may overstate benefits. Secondly, the market data are only available for a limited number of goods and services provided by an ecological resource and may not reflect the value of all productive uses of a resource. Therefore, this method was cautiously considered as a measure for estimation of environmental and social costs in this project.

2. Productivity Method – The method estimates economic values for ecosystem products or services that contribute to the production of commercially marketed goods. Since not all services may be related to the production of marketed goods then the inferred value of a particular impact may understate its true value to society. Therefore based on this limitation and the fact that the area was only used for cultivation and grazing after removal of the crops, the method was not considered for use.

3. Hedonic Pricing Method – This method estimates economic values for ecosystem or environmental services that directly affect market prices of some other good. Most commonly applied to variations in housing or office accommodation prices that reflect the value of local environmental attributes. In other words this method uses real estate prices. The logic is that office space prices or rents may go up due to their closeness to other amenities and in this case a new NBS office building within Dodoma. While considering using this method, it was noted that more office space under one roof may prove to be an incentive for NBS staff to produce quality and

timely reports for the development of the country provided other services to the staff like canteen and residential accommodation in a new capital are guaranteed. It may be the case today that NBS staff lacks this incentive of decent office accommodation under one roof. Automatically the proposed office space will be augmented by additional features such as staff residential accommodation and staff canteen as it will boost the staffs morale through working under "one roof" atmosphere. Therefore it was reasonably considered to use this method in combination with the other method in estimating the environmental cost

4. Travel Cost Method – The method estimates economic values associated with sites that are used for recreation. Since this office building project was not used for recreation activities, then the time and travel cost expenses that people incur when visiting the site does not represent any revealed willingness to pay to come to site. The facts gathered on site demonstrated that this is not a recreational area rather it is an area reserved for government offices in Dodoma. Therefore this method was also not used for this cost benefit analysis.

5. Damage Cost Avoided, Replacement Cost, and Substitute Cost Methods – These methods estimate economic values based on costs of avoided damages resulting from lost ecosystem services, costs of replacing ecosystem services, or costs of providing substitute services. This method was considered for use in the evaluation of the costs for remedy such as water sprinkling to suppress dust or provision of PPE or mitigation actions to avoid occupational injuries. This method was also considered for use in estimating the environmental costs emanating from this project.

6. Contingent Valuation Method – This estimates economic values for virtually any ecosystem or environmental service. The most widely used method for estimating non-use, or "passive use" values. The method involves asking people to directly state their willingness to pay for specific environmental services or their willingness to accept compensation for destruction of the resource based on a hypothetical scenario. The difference between these two is relevant when an allocation of property rights or a redistribution of income is a project feature. Since the project land is legally owned by the Project proponent- a government institution, the usefulness of this method seems to be of low value. However, this method was used in combination with the other methods (e.g. damage cost avoided) in the estimation of the costs of the impacts.

7. Contingent Choice Method – The method estimates economic values for virtually any environmental service. Based on asking people to make tradeoffs among sets of ecosystem or environmental services or characteristics. The method major attribute does not directly ask for willingness to pay—this is inferred from tradeoffs that include cost as an attribute. The limitations of this method include
    i. Some tradeoffs are difficult to evaluate, because they are unusual.
    ii. The respondents' behaviour underlying the results of a contingent choice study is not well understood. Respondents may resort to simplified decision rules if the choices are too complicated, which can bias the results of the statistical analysis.
    iii. When presented with a large number of trade-off questions, respondents were likely to lose interest or become frustrated.
    iv. Contingent choice may extract preferences in the form of attitudes instead of behaviour intentions.

v. By only providing a limited number of options, the method may force respondents to make choices that they would not voluntarily make.
vi. Contingent ranking requires more sophisticated statistical techniques to estimate willingness to pay.
vii. Translating the answers into dollar values, may lead to greater uncertainty in the actual value that is placed on the good or service of interest.
viii. Although contingent choice has been widely used in the field of market research, its validity and reliability for valuing non-market commodities of environment is largely untested.
Therefore this method was also not adopted for use in this project cost benefit analysis.

8. Benefit Transfer Method – The method estimates economic values by transferring existing benefit estimates from studies already completed for another location or issue. Since there was no similar information of the project that could be used as an example in the project area, the method was equally not adopted for use in this assignment. The fact that most the neighbouring office buildings are new, some are still under construction, there were no good references that can be applied in the project at hand.

Based on the combination of adopted methods the cost of these impacts (including the monitoring costs estimated under Chapter 9, all worth about less than half a million dollars as estimated below on Table 38

Table 38: Cost estimates for Environmental and Social Impacts

Item description	Unit Rate (USD)	Quantity	Total (USD)
1. Loss of vegetation through clearance	10	7,200 sq m	72,000 – The area was constantly cultivated and grazed but it had been assumed to be covered with vegetation
2. Deterioration of familiar scenic and visual quality (environmental cost based on willingness to pay for loss)	35	7,200 sq m	252,000
3. Noise and vibration (cost of PPE per person)	50	100 people	5,000
4. Poor air quality (Cost of sprinkling per month)	300	18 months	5,400
5. Contamination of water (based on cost of preventing contamination – equipment service/month)- skimming tanks	500	24 months	12,000
6. Waste and trash generation (based on cost of removal and cleaning	4,000	24 months	96,000
7. Poor health and safety (based on cost of health insurance for 100	500	2 years insurance	100,000

employees/year)			
8. Increased potential for accidents and construction hazards (based on cost for signage, First Aid Kit, training and sensitization of employees/month)	2,000	12	24,000
9. Poor health standard during construction (cost based on sensitization, screening and treatment	Combined under item 8 above		
10. Safety hazards and occupational injuries at work place (Cost for PPE and Training)	200	100 employees	20,000
11. Risk to spread of diseases from newly recruited staff	Combined under item 8 above		
12. HIV/AIDS Programs	Lump sum		50,000
13. Add monitoring costs under Chapter 9			33,200
Total Costs of Remedy / Avoided costs			**670,600**

10.3 Project Cost, Benefits and Consequences in Time Frame

It is important to understand the costs of the proposed office building and its environmental cost, benefits and consequences over time. The estimated cost of the proposed building is about USD 7,500,000
If environmental costs are added to the expected construction costs, the overall cost of the project when it is ready for use will be about USD 8.2 Million

The average annual costs of renting of new office premises for NBS in Dodoma may be estimated at USD 400,000 regardless of the location in Dodoma. If an office building has to last for 50 years, we are talking of spending over USD 20 million in rental charges only besides services.

If spending about USD 8.2 Million to have a new office building and save USD 20 Million in rental charges for 50 years cannot get any credit, then no work worth any effort can be justified

If the project is implemented, many benefits of improved work, health and environmental protection, improved aesthetic beauty of the area, creation of employment, taxes on construction materials, availability of descent office space, improved infrastructure, etc will be realised. Overall, the new NBS office building will have great benefits economically and environmentally compared to current use of the project area.
The total cost of the project is estimated to be about USD 8.2 Million. The estimated economic internal rate of return on the total investment is about 11.4 percent, and the payback period for investment is 10 years. The cost of mitigation measures and environmental monitoring is about 680,000 and its ratio to total investment is 8.29%. The main benefits of these measures are contributions to the development of a new capital of Tanzania which will have major benefits in the long run.

11. DECOMMISSIONING

11.1 Introduction

Decommissioning is the final phase in the life cycle of the facility after sitting, design, construction, commissioning and operation. Most often, it is a process involving operations such as dismantling and demolition of building structures and management of resulting materials. All these activities take into account of the environmental health and safety requirements for the operating personnel, the general public and any implications to the environment.

The office building is not like manufacturing facilities whereby the methods used to manufacture some products are increasingly replaced by modern technology or process! The demolition of the office building after its useful life can be thought of in terms of the life span of concrete structures that can live up to 50 years or so.

Alternatively if at any time, the office building becomes unusable, life threatening or unsafe to a state where its demolition is necessary, may be to pave a way for a new project, then a new environmental impact assessment study will be required as provided for in the Environmental Management Act Cap 191.

11.2 Reinstatement

The decommissioning plan considered here will be recovery of reusable items, demolition of the structure, removal of concrete debris from the present site and returning the area in another form through planting trees and other natural vegetation to match the surroundings.

The major result of demolition will be large volume of concrete debris. These large volumes will need to be handled through collection, loading and transportation to the final disposal site. Wastes must be disposed off according to the procedure drawn up during the detailed decommissioning plan to become due about two years before the actual decommissioning activity. NEMC who will approve the detailed decommissioning plan can provide further guidance on the management of the resulting waste. Disposal of all wastes must be in accordance with the "Duty of Care" and the conditions of the environmental performance bond.

11.3 Decommissioning Budget

Decommissioning is envisaged to involve large sums of money. The project proponents will therefore set aside a budget estimated to about USD 1,000,000 to facilitate demolition and reinstatement of the area to another usable form or to match the surroundings. The estimated budget of decommissioning will be raised from government sources will be determined during detailed decommissioning phase as deemed fit by the NBS.

12. SUMMARY AND CONCLUSIONS

12.1 Summary

This report is intended to offer an objective assessment on the concerns that were raised during the scoping phase of the study as well as those noticed by the assessment team in the project area based on the technical expertise with the Environmental Expert. The purpose of this report is to identify and assess the potentially significant environmental and social issues and environmental impacts. Ultimately, the report should give NEMC and other interested stakeholders the opportunity to make an informed decision regarding the new NBS office building project and its various options.

The construction and operation of the proposed office building project can result in a variety of impacts on the natural environment as well on the neighbours in the vicinity of the site. The issues related to the proposed development were identified, discussed and assessed. Mitigation measures were listed and the possible remedial options reviewed.
The issue of an alternative project site was discussed under sub-section 6.5. Equally important, the consideration of "Do-Nothing Option" was discussed in sub-section 6.5.4. The "no-project could be justifiably dismissed as an alternative due to the need and desirability of the new NBS office under one roof in Dodoma Capital City. Of course the proposed 5 storey can be attained as there is a regulation in existence which limits the height of the building in this zone to a minimum of 7 storeys.

12.2 Conclusion

The findings of environmental impact assessment of the proposed office building are positive overall on the social–economic environment of the area. However, the impact of the project on the bio-physical environment is potentially slightly negative in pre-construction, construction and operation phases of the project.

In addition to this, the environmental impacts expected from the proposed development can be mitigated to an acceptable/satisfactory standards except those associated disturbances during construction, which are rated to be of low significance. However, the impacts mentioned in here are not of sufficient importance to stop the proposed office building project. The management of the identified negative impacts will require implementation of the necessary mitigation measures detailed within Section 7 of this document and in the Environmental Management Plan, EMP prepared under section 8 of this EIS report. With adequate management of the identified impacts, as required by the EMP, the environmental risks and impacts of the proposed project can be minimized to acceptable levels.

Furthermore, in order to ensure that the construction of this proposed development does not result in to potential negative impacts on site and in the surrounding area, a detailed engineering design must be carried out taking into consideration of the concerns raised by the neighbours. Also a Community Liaison Office (CLO) must be established and must comprise of the following key stakeholders:

- Three members of the Tambukareli Ward Development Committee.
- Contractors HSE officer
- Capital Development Authority representative
- Municipal Environmental Management Officer

- NBS Project Manager or Project Administrative Officer

During construction the committee must continue to function as the key role player to ensure that the contents of the EMP are complied with. This committee will also be responsible for dealing with or addressing any issues associated with the proposed new NBS office building project. The composition of the committee must be changed during operation to suit the conditions of the site based on its use and this will ensure the good co-existence of the office building with the surrounding buildings.

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APPENDICES

A.1 Approval of Scoping Report and Terms of Reference

NATIONAL ENVIRONMENT MANAGEMENT COUNCIL(NEMC)
BARAZA LA TAIFA LA HIFADHI NA USIMAMIZI WA MAZINGIRA

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In reply please quote:

Ref: **NEMC/HQ/EIA/01/0632/Vol.1/4** Date: **07/10/2016**

Director General,
National Bureau of Statistics,
18 Kivukoni Road,
P.O. Box 796,
Dar es Salaam

RE: SCOPING REPORT AND TERMS OF REFERENCE FOR THE PROPOSED DEVELOPMENT OF 6 STOREY NEW NBS OFFICE BUILDING ON PLOT NO. 8 BLOCK "A" IN DODOMA MUNICIPALITY

We acknowledge receipt your letter with **Ref. No. EBM/NBS-NEMC-2016/111** of 7th October, 2016 attached with copies of scoping report and Terms of References for the above mentioned project.

The ToR is adequate and therefore is approved to guide the EIA study. However, the following should also be taken into consideration to improve the ToRs.

i. The project title on the final EIS should bear the number of storey to be erected ***i.e. "Proposed development of 6 storey new NBS Office building on Plot No. 8 Block "A" in Dodoma Municipality"***
ii. The EIS should clearly describe of all project components/activities;
iii. The contents and the structure of the EIS should adhere to Regulations 18 and 19 respectively of the EIA and Audit Regulations, 2005.
iv. Proof regarding the compatibility of the proposed development with the Redevelopment plan of the area should be provided in the EIS;
v. Proof of legal landownership for the proposed project site should be provided in the EIS;
vi. Attach site layout plan showing the size of the project site in relation to the location of the components of the project and
vii. Stakeholders' consultation should be exhaustive and records of meeting, communication and comments raised should be appended and addressed in the EIS. Names and signatures of all consulted stakeholders should be appended as well. Also, include stakeholder's issue

All correspondence should be addressed to the Director General

response table showing how and where significant issues raised by stakeholders have been addressed in the EIS.

Please, work on these comments and the improved ToRs should be appended in the final EIS to be submitted to NEMC for review.

Following receipt of the EIS, the Council will arrange for the site verification visit to the project site and review meeting that will follow thereafter.

You will be required to provide transport facility for site verification team and review costs amounting to **Tshs. 16,000,000/=** which excludes transport costs as elaborated on the attached sheet (***NEMC Invoice NO. 3155)***. The funds can be paid by cheque or electronic money transfer to NEMC's Bank Account No. **0150005055800**, Bank Name: **CRDB Bank Limited**, Branch: **PPF Tower Branch**, Swift Code: **CORUTZXXX.** Please, submit copy of bank transfer note to the Council.

We look forward to your cooperation on this matter.

Yours Sincerely,

R. Said
For: Director General

Cc: Eng. Venant E.K. Rwenyagira, P.O. Box 77222, **Dar es Salaam.**

All correspondence should be addressed to the Director General

A.2 Approved Terms of Reference for Environmental and Social Impact Assessment for the Proposed Construction of New NBS Office Building.

1. Introduction

The purpose of these Terms of Reference (TOR) is to provide formal guidance to the ESIA consultant of the proposed construction of new National Bureau of Statistics office building on the range of issues that must be addressed in the ESIA process. They form the basis for subsequent review process.

2. Project Description

The National Bureau of Statistics (NBS) was established as an autonomous public office by the Statistics Act No. 9 of 2015 and was given mandate to provide official statistics to the Government, business community and the public at large. The Act also gave NBS the mandate to be a co-coordinating agency, within the National Statistical System (NSS) to ensure that quality official statistics is produced. Before the enactment of the Statistics Act No. 9 of 2015, the NBS was one of the Government Executive Agencies which was established on the 26th March, 1999 under the Executive Agencies Act, 1997.

Since its establishment in 1997, the National Bureau of Statistics was housed in two different buildings located in two different parts of downtown Dar es Salaam. The NBS headquarters is in an old building which makes part of three attached buildings occupied by the National Bureau of Statistics, Mapping Department of the Ministry of Lands, Housing and Human Settlements Development and the former Prisons Department under the Ministry of Home Affairs, which has now moved out to another building. The second building that houses NBS stores are located on Mkwepu Street in the Central Business District of Dar es Salaam. The building where the stores are located comprise of offices on the ground and first floors and a residential accommodation on the second floor.

The status of NBS offices being scattered in different parts of Dar es Salaam city limited the expansion of the office and its activities. This situation forced NBS to initiate some plans in 2008 to construct a multi storey office building to allow its operations to be under one roof.

Before the construction of the new office building was started in Dar es Salaam, the Government issued the directive that the earmarked offices must be built in Dodoma. Upon receipt of this directive, NBS contacted the Dodoma Capital Development Authority and secured an undeveloped plot No. 8 in area A, with a total coverage of over 7,000 square meters. The secured space is undoubtedly adequate for at least 200 headquarters staff, computer centre, conference and training rooms, library facilities, stores, etc. The secured premised will accommodate all statistics activities and functions and will act as a one-stop centre of statistics for better policies and development outcomes. The new premises shall also enable NBS staff to work in a safe and healthy environment which is a prerequisite for any serious and important work such as statistical data processing for all national censuses and surveys.

3. Environmental Assessment Requirements

The ESIA will be prepared consistent with the requirements of Tanzania National Environmental laws as well as the World Bank's safeguard policy on Environmental Assessment, OPBP 4.01. The Environmental Management Act (EMA) Cap 191 of 2004 requires that ESIA be undertaken for all new projects that may cause adverse

environmental and social impacts. Under the Environment Impact Assessment and Audit Regulations, 2005 the proposed project is categorized as an ESIA obligatory project for which a full EIA is required.

On the other hand, the core requirements for the triggered World Bank safeguard policy include: screening early for potential impacts and selecting appropriate instruments to assess, minimize and mitigate potential adverse impacts. OP/BP 4.01 is triggered if a project is likely to have potential environmental risks and impacts in its area of influence. The policy covers impacts on the natural environment (air, water, land and noise); human health and safety; physical cultural resources; and transboundary and global environment concerns.

4. Objectives of ESIA

The objectives of the Environmental and Social Impact Assessment are:

- To establish baseline information on both natural and built environment including socio-economic conditions of the proposed project area.
- To identify, predict and evaluate foreseeable impacts, both beneficial and adverse, of the proposed project; and
- To develop mitigation measures that aim at eliminating or minimizing the potential negative impacts and promote positive ones.
- To develop management clauses and monitoring aspects to be observed during project implementation.

The key findings and recommendations from the ESIA study will be incorporated into the detailed design of architectural and engineering drawings and specifications of the proposed construction of new office building. The terms of reference for the design and engineering drawings and specifications already has been prepared and work is in progress.

5. Study Area

The proposed construction of new buildings of the National Bureau of Statistics office is located in Tambukareli ward, Plot No 8 Block A in Dodoma Municipality. The NBS office has initiated the process of acquisition of the Title Deeds of the new office plot with the Capital Development Authority in Dodoma. The Consultant shall determine and set the project boundaries particularly spatial boundaries (i.e. impact area coverage and area of influence).

6. Scope of Work

The ESIA should assemble and evaluate baseline data on the biophysical and socio-economic characteristics of the project area and areas of influence. The baseline information should include: any changes anticipated before project commences; an identification of operationally relevant issues that may affect project design, implementation and outcomes. Specifically the following task will be carried out

Task 1: Description of the Proposed Project

The Consultant shall give details of:

- Location of all project-related development and operation sites
- General layout of facilities - diagrams of structures, design basis, size, sources of utilities;
- Pre-construction activities, construction activities; and post construction activities; and

- Organizational relationships, mandates and interactions among the different parties to be involved in the project.

Task 2: Description of the Environment

The Consultant shall:

(i). Provide general description of the project environment and sources of information for anyone requiring a more extensive description (especially the ESIA reviewers).

(ii). Identify those features that are particularly important in the project area and other areas related to the project in Dodoma Municipality maps at appropriate scales to illustrate the surrounding areas likely to be environmentally and socially affected.

(iii). Identify areas that require special attention during different phases of the project implementation.

Task 3: Legislative and Regulatory Considerations

The Consultant shall: Describe pertinent local, national and international regulations and standards governing environmental quality, health and safety, land use control which the project developer (NBS) is required to observe during the implementation of the project activities.

Task 4: Determination of Potential Impacts of the Proposed Project Activities

Under this activity the consultant shall:

(i). Identify and evaluate significant environmental and social impacts (positive and negative) and risks, identify indirect, residual and cumulative impacts that may be anticipated, predict and assess in quantitative terms probability, magnitude, distribution and timing of expected impacts; and proposed alternatives (e.g. location, structure and size, sites, routes), etc

Task 5: Estimation of the significance of the impacts

The consultant shall:

(i). determine which environmental and social components are mostly affected by the project or its alternatives;

(ii). list issues raised by the public and classify them according the level and frequency of concern whenever possible;

(iii). list regulatory standards, guidelines etc. that need to be met; and

(iv). Rank predicted impacts in order of priority for avoidance, mitigation, compensation and monitoring.

Task 6: Developing an Appropriate Environmental Management System / Plan (EMP) Based on Impacts Identified

The consultant shall:

(i). determine appropriate measures to avoid or mitigate undesirable impacts;

(ii). assess and describe the anticipated effectiveness of proposed measures;

(iii). ascertain regulatory requirements and expected performance standards;

(iv). determine and assess methods to monitor impacts for prediction accuracy remedial measures for effectiveness;

(v). determine and assess methods to monitor for early warning of unexpected effects;

(vi). re-assess project plans, design and project management structure;

(vii). describe follow-up scheme and post-project action plan for achieving ESIA objectives; and

(viii). Assess the level of financial commitment by the project proponent for the management and monitoring plan, and follow up activities

The environmental management plan should also outline how the project will be run (equipment/building material stored etc to avoid environmental damage) during implementation and how it will be cleared up after construction.

The consultant shall be guided by the cost-effectiveness principles in proposing amelioration measures. Estimation of costs of those measures shall be made. The assessment will provide a detailed plan to monitor the implementation of the mitigation measures and impacts of the project during construction and operation.

Task 7: Institutional Set-up for the Implementation of EMP

The Consultant shall review the institutional set-up - community, ward, Municipal/ Regional and national levels - for implementation of the ESMP and EMP recommended in the environmental assessment. The ESMP and EMP shall identify who should be responsible for what and when.

Task 8: Drawing Recommendations

The consultant shall:

(i). highlight key environmental and social concerns/ issues that should be considered for incorporation into the detailed design architectural and engineering drawings and specifications for the proposed office building;
(ii). determine resources requirements for implementing recommendations;
(iii). determine capacity and resourcefulness of the client to meeting such commitment;
(iv). explain rationale for proposed development and benefits and costs vis-à-vis the no-project option;
(v). Ascertain degree of public acceptance of or reaction to recommendations.

Task 9: Production of an Environmental Impact Statement (EIS)

The assessment shall result into an EIS focusing on findings of the assessment, conclusions and recommended actions, supported by summaries of data collected etc. This shall be a concise document limited to significant environmental issues. The report format will be as per The Environmental Impact Assessment and Audit Regulations No.349 of 2005 managed by the National Environment Management Council (NEMC).

Task 10: Review

The review report from NEMC may require further input (data collection, consultation inputs etc.). The consultant shall undertake to provide extra information and inputs until the project review is satisfactorily concluded.

Task 11: Public Consultations

The assessment shall establish the level of consultation of the affected stakeholders before designing the project, level of involvement in the running and maintenance of the project facilities as this is an important aspect for both environmental and project sustainability.

The assessment will provide a framework:

- for coordinating the environmental impact assessment with other government agencies, and

- For obtaining the views of affected groups, and in keeping records of meeting and other activities, communications, and comments and their disposition.

The consultants shall provide record of the names of organizations, government and departments and individuals whose views were obtained. The record will also provide description of views and information that will be obtained. These will be additional consultations to what will conducted during the scoping study.

Task 12: The Consultant shall take all necessary steps to ensure that permission (Certificate) to proceed with other stages of the project from National Environmental Management Council (NEMC) is obtained within short period of time as agreed and stated in the consultants work plan.

7. Time Scale

Unless suggested otherwise at the screening stage of EIA process, the study has to be 'Comprehensive' in nature and hence shall involve data collection, analysis and results within three months from the date of the signing of the contract. This period accommodates registration for the project; follow up of the review with NEMC, and obtaining certificate on behalf of the Client. However, the effective consultancy period will be determined by the consultant based on the timeline for deliverables.

8. Consultant(s) Qualifications

The consultant must have a masters degree in relevant field with experience of not less than 5 years in environmental management issues

(i). Understanding of Environmental Management Act and EIA guidelines and procedures of the United Republic of Tanzania,
(ii). Knowledge of World Bank safeguard policies,
(iii). Demonstrated experiences in environmental assessment and review and approval procedures for development projects in Tanzania.
(iv). Ability to produce high quality reports and presentations.

If necessary, total staffing requirements for the assignment will be determined by the Consultant in their proposal. The Consultant must provide CVs to indicate that he is qualified for the assignment.

9. Counterpart Staff

The consultant will be required to work together with the counterparts at NBS; including statisticians, IT, sociologists, and an economist in order to ensure clarity of issues, transfer of knowledge for future use of the client and to ensure ownership.

10. Reporting

The consultant shall report to the project management team. The following reports shall be required

1. Inception report to be submitted two weeks after the contract signature
2. The consultant shall be required to submit progress reports, however this is subjected to the work plan to be submitted by the consultant
3. Draft report shall be submitted to the TSMP for review before submitting the final report

11. Services, Facilities and Materials to be provided by the Client

NBS will provide necessary services, facilities and materials to the Consultant including:

- Relevant draft project documents;
- Relevant background documentation and studies and publications;
- Making all necessary arrangements for facilitating the work of the Consultant and to provide access to government authorities, and other Project stakeholders.

12. Deliverables

The consultant shall prepare and present of reports at various milestones in the ESIA process and as per the time schedule mutually agreed. Deliverables by the consultant shall include:

(i). Prepare and submit project brief to NEMC for registration;
(ii). Undertake scoping study and submit report together with the Terms of Reference for full ESIA to NEMC;
(iii). Draft ESIA/EIS report for submission to Technical Review Committee (TRC); and
(iv). Final ESIA/EIS report.
(v). Certificate from NEMC

The consultant shall submit to the Client 2 original bound hard copies and electronic copies of the Scoping Report and the Environmental Impact Statement (EIS). The Consultant shall also make 15 copies for the review process as stipulated in the EMA 2004 (the costs for making such copies will be included in the budget for the assignment).

The Consultant will prepare and submit a work plan for undertaking the ESIA, activities that would be carried out and methods that shall be used, timeframe, deliverables, etc.

A scoping study which will involve literature review, identification of stakeholders, conducting a scoping exercise around the construction site and identification of alternatives, will precede the full ESIA study. The scoping exercise will further enrich these Terms of Reference for the full EIA including suggesting the likely expertise required for the assignment.

End of the Terms of Reference

A.3: NEMC's Screening Decision

NATIONAL ENVIRONMENT MANAGEMENT COUNCIL(NEMC)
BARAZA LA TAIFA LA HIFADHI NA USIMAMIZI WA MAZINGIRA

Telephone: +255 22 2774889,
Direct line: +255 22 2774852
Mobile: 0713 608930
Fax: +255 22 2774901
Email: dg@nemc.or.tz
Website: www.nemc.or.tz

35 Regent Street,
P. O. Box 63154
11404 Dar es Salaam
TANZANIA

In reply please quote:

Ref: **NEMC/HQ/EIA/01/0632/Vol.1/2** Date: **06/10/2016**

Director General,
National Bureau of Statistics,
18 Kivukoni Road,
P.O. Box 796,
Dar es salaam

RE: SCREENING DECISION FOR THE PROPOSED DEVELOPMENT OF NEW NBS OFFICE BUILDING ON PLOT NO. 8 BLOCK "A" IN DODOMA MUNICIPALITY

Kindly refer the heading above.

We acknowledge receipt your letter with Ref. No. EBM/NBS-NEMC-2016/109 of 28th September, 2016, attached with three copies of dully filled Environmental Impact Assessment certificate application forms and copies of the Project briefs in respect of the above mentioned project for review.

Kindly be informed that the project has been registered by the Council and allotted Application Reference number **6270 with project title "Proposed development of new NBS Office building on Plot No. 8 Block "A" in Dodoma Municipality"** which must be referred in all future correspondence for this project.

Following the review of the submitted documents, the Council has reached a decision that your project requires a full Environmental Impact Assessment (EIA) study.

Following this decision, you are therefore required to carry out a scoping exercise and submit a Scoping report and Terms of References (ToR) to the Council for review and approval before the beginning of the EIA study. Also, be reminded that, the scoping report should conform to the EIA and Audit Regulations 2005 particularly Regulation 13 (3) and the Fourth Schedule made under

All correspondence should be addressed to the Director General

Regulation 15 for the contents of the scoping report and the essence of the scoping exercise respectively. However, the scoping report should also contain the following information:-

i. Evidence of legal land ownership;

ii. Details of all project components/activities;

iii. Compatibility of the proposed development with the Central Development Authority (CDA) Redevelopment plan;

iv. Detailed stakeholders consultations.

In case you need further clarification on this matter, please do not hesitate to contact us through **Tel No. +255 787 539 468.**

We look forward to your cooperation on this matter.

Yours Sincerely;

R. Said

For: Director General

Cc: Eng. Venant E.K. Rwenyagira, P.O. Box 77222, **Dar es Salaam.**

All correspondence should be addressed to the Director General

A.4: Introduction Letter for Public Consultations

National Bureau of Statistics

Tel: +255 (0) 22-2122722/3,
Fax:+255 (0) 22-2130852,
E-mail: dg@ nbs.go.tz, Website: www.nbs.go.tz

18 Kivukoni Road,
11992 Dar salaam,
TANZANIA

Our Ref: NBS/1.30/1/28

13th September, 2016

RE: TO WHOM IT MAY CONCERN

This is to certify that **Eng. Venant E.K.Rwenyagira** of . P .O. Box 77222 Dar Es Salaam,Tanzania is our **consultant** engaged for carrying out Environmental and Social Impact Assessment (ESIA) with regard to Construction of a New Office Building for the National Bureau of Statistics (NBS) in Plot No.8, Block A in Dodoma Municipality.

Thus, NBS requests your assistance to enable him carry out the assignment in question timely and successfully.

Yours Sincerely,
National Bureau of Statistics

E.S.Mwakitalu
For: Director General

A.5: Officials consulted in Dodoma Municipality

OFFICIALS CONSULTED

IN DODOMA FOR ESIA - NEW OFFICE BUILDING IN PLOT Nº 8, BLOCK A, DODOMA

S/N	Name	Title/contact	Signature
1	Madenge, R.S.	RAS 0784424686	
2.	Jasinta V. Mbaneko	DAS-Dodoma 0782688528	
3.	THOMAS D WAMI (WEO)	0782688528	
4.	PASCHAL M. MADALA (CDO)	0712556703	
5.	ANNA D. MCHOMVU (LO)	0653225191	
6	TULLY R. MWAMWEGWA	Ag. MEC - 0754778517	
7	ENG. JOHN NCHILLA	0767290681 MUNICIPAL ENGINEER DMC	
8	Bellah Ally G.Eng	CDA Box 918 Building Control officer (BCO) 0759225337	
9.	Eng. Kashilimu Mayunga	Duwasa Technical Manager 0754238864	

A.6: Attendance List of Public Consultation meeting

MAHUDHURIO YA KIKAO CHA PAMOJA CHA VIONGOZI WA KATA YA TAMBUKARELI CHA TAREHE 20 SEPTEMBA 2016

	JINA KAMILI	CHEO	NAMBA YA SIMU	SAINI
1	Hashim A. Mswya	Mwenyekiti	0713-348531	[signature]
2	Thomas D. Wami	Katibu	0754520606	[signature]
3.	Hassan S. Mswahili	Mwenyekiti	0753789302	[signature]
4.	Norbert Pangaselo	Mwenyekiti	0713446840	[signature]
5	Sophia G. Maganga	Mjumbe	0766024323	[signature]
6	Aidan T. Mwenda	"	0768710613	[signature]
7	Salma Luassa	Mjumbe	0759345521	[signature]
8	Taji Bakari	Mjumbe	0672160022	[signature]
9	Astone Kalinga	Mjumbe	0752102373	[signature]
10	Lister Simon Peter	Mjumbe	0717-790360	[signature]
11	Raphael Msambili	Mjumbe	0686 808885	[signature]
12	Emi Machimo	Mjumbe	0762920775	[signature]
13	Matha Sadara	Mjumbe		
14	Sina Juma	Mjumbe		[signature]
15	Tenene Mwambunga	Mjumbe	0764354400	[signature]
16	Paschal Matala	Mjumbe	0754848559	[signature]
17.	Anna Mchomvu	Afisa Mifugo	0755754407	[signature]
18	Hellen Bunyinyiga	Mratibu	0653225191	[signature]
19	Kassim S. Muhija		0784421355	[signature]
20.	Mrs L. H. Mswya	Mjumbe	0754752495	[signature]
21	Juma Mazengo Michael	Mjumbe	0713405098	[signature]
22	Kulwa Mazengo	Diwani	0763-013999	[signature]
23	Lidia Mwambuluma	M/kiti Kamati / Mjumbe	0753544109 / 0752-559858	[signature]

AFISA MTENDAJI KATA YA TAMBUKARELI

A.7: Minutes of the Public Consultation meeting

MUHTASARI WA KIKAO CHA PAMOJA CHA VIONGOZI WA KATA YA TAMBUKARELI CHA TAREHE 20 SEPTEMBA 2016

AGENDA ZA KIKAO

1. KUFUNGUA KIKAO
2. UTAMBULISHO WA WIENZI OFISI ZA TAKWIMU YA TAIFA
3. KUFUNGA KIKAO

1:0 KUFUNGUA KIKAO

Mwenyekiti wa kikao alianza kwa kuwashu. ru wajumbe kwa kuhudhuria kikao hiki cha dharula na baada ya hapo akatamka kuwa kikao kimefunguliwa rasmi saa 4:15 asubuhi

2:0 UTAMBULISHO WA WIENZI OFISI ZA TAKWIMU YA TAIFA

Mwenyekiti alimkaribisha mlugu Eng VENANT RWEN-YAGIRA ili kutoa Maelezo juu ya ujio wa kikao hiki

AFISA MTENDAJI KATA YA TAMBUKARELI

2:1 UTAMBULISHO

Mtaalam alitoa utambulisho wa mvadi wa wienzi ofisi ya Takwimu ya Taifa kuwa kwa sasa wanaanza kujenga hizo ofisi

Katika eneo la karibu na ukumbi wa jengo la C.C.M mpya kwa upande wa kusini eneo lenye ukubwa wa 78.2 x 94.24

2:2 MAJADILIANO

i Wajumbe wamewapokea ofisi ya Takwimu ya Taifa na kuwapongeza kwa uungwana wao kujali ya wananchi ambao wapo eneo husika.

ii Wajumbe walitaka kujua kuwa wananchi ambao wamekutwa wanafanya shughuli zao humo watawafikiliaje kwani wametunza maeneo haya kwa muda mrefu

iii Wameomba hao wananchi waangaliwe kwani eneo hilo kama lisingetunzwa mngekuta kuwa ni poli na mngeghavamia kwa kuliandaa ili kujengwa mahusiano mazuri hawa waangaliwe

2:3 SHUGHULI

Katika eneo hilo kuna watu wanaolima nao ni

(i) ISACK SAAD 0754993579

(ii) JOYLE NDALU 0764668727

(iii) GLELE MAZENGO 0752363793

(iv) SEMENI AIDANI

Wao ni wakazi wa Mtaa wa Sechelela Kata ya Tambukareli.

AFISA MTENDAJI KATA YA TAMBUKARELI

Baada ya haya yote wajumbe baadhi walio-
ruhusu kwenda kuona eneo hilo na kuthibitisha
a kuwa watu hawa wanne wapo nalani ya ene
o la mradi hivyo wajenzi ofisi ya Takwimu
Taifa
Wajumbe hao ni:-

1. JUMA MAZENGO MICHAEL MHE DIWANI
2. THOMAS D WAMI MTENDAJI KATA
3. NORBERT PANTASELO MWENYEKITI SECHELELA
4. KULWA MAZENGO MWENYEKITI AMANI
5. ENG. VENANI RWENYAGIRA

3:0 KUFUNGA KIKAO

Mwenyekiti amemuelia fena kuwashukuru wajumbe
na baada ya hapo akatamka kikao kimefungwa
Mwano saa 7.05 alasiri

JUMA MAZENGO MICHAEL
MWENYEKITI
20/09/2016

T D WAMI
KATIBU
AFISA MTENDAJI
KATA YA TAMBUKARELI
20/09/2016

A.8: Evidence of Legal Land Ownership

CAPITAL
DEVELOPMENT
UTHORITY
.O. BOX 1 & 913
DODOMA

MAMLAKA
YA USTAWISHAJI
MAKAO MAKUU
S.L.P 1 & 913
DODOMA

Telephone: +255 (0) 262[illegible] Fax: +255 (0) 262[illegible] E-mail: [illegible] @cda.go.tz website: www.cda.go.tz

Kumb. Na. CDA/ED/LA-15/67638/2 *5 Agosti, 2016*

Ofisi ya Taifa ya Takwimu,
S. L. P. 796,
DAR ES SALAAM.

Yah: **KUPEWA KIWANJA NA. 8 KITALU 'A' NCC, MANISPAA YA DODOMA.**

Tunachukua fursa hii kuwataarifu kwamba Mamlaka ya Ustawishaji Makao Makuu imewapatia kiwanja kilichotajwa hapo juu kwa masharti yafuatayo:

1. Mnatakiwa kuwasiliana na Idara ya Mipango ya Mamlaka kwa ajili ya kupatiwa kibali cha ujenzi.

2. Kiwanja hiki ni kwa ajili ya **ujenzi wa Ofisi** tu

Unatakiwa kuwasiliana na Idara ya Milki Ardhi ya Mamlaka katika muda wa siku **Ishirini na nane** (28) kuanzia tarehe ya barua hii kwa ajili ya kulipia gharama za kumiliki kiwanja hiki.

Wako,
MAMLAKA YA USTAWISHAJI MAKAO MAKUU

Masawika F. Kachenje
Kaimu Mkurugenzi wa Milki Ardhi
Kny: **MKURUGENZI MKUU**

Nakala: Mkurugenzi wa Mipango, **CDA.**

MFK/RJM/ab.

Correspondence should be addressed to the Director - General

A.9: Summary of Geotechnical Investigation Report

MINISTRY OF FINANCE

NATIONAL BUREAU OF STATISTICS

FINAL REPORT
ON
GEOTECHNICAL INVESTIGATION

PROJECT

PROPOSED NBS OFFICE BUILDING ON PLOT No. 8
BLOCK 'A' NCC IN DODOMA MUNICIPALITY

NORPLAN
TANZANIA LIMITED
Consulting Engineers and Planners

OCTOBER, 2016

TABLE OF CONTENTS

1. INTRODUCTION

NORPLAN TANZANIA LTD an Engineering Consulting firm was contracted by NATIONAL BUREAU OF STATISTICS (NBS) to carry out the geotechnical investigation for the Proposed Office building to be constructed on Plot No. 8 Block 'A' NCC in Dodoma Municipality.

This report summarizes the findings and observations obtained from the field and laboratory works. The field works included borehole drilling, trial pit excavations, in-situ tests and borehole logs. The field investigations were carried out in September 2016 in accordance with the British Standard Specifications (BS 5930:1999).

The collected samples from boreholes and trial pits were sent to NORPLAN Soil Mechanics Laboratory for testing. The laboratory testing of soil samples was carried out in accordance to BS 1377:1990.

The report also provides details of the tests carried out, their analysis, recommendations regarding the foundation system to be adopted and safe bearing capacity for the structure.

2. OBJECTIVES

The main objectives of the ground investigation were to determine the probable sub surface conditions such as stratification, denseness or hardness of the strata, position of groundwater table etc. and evaluate the safe bearing capacity for the structure.

3. FIELDWORKS

The fieldworks included drilling a total of three boreholes to depths of 15.0m below the ground level and excavation of five trial pits to depths of 1.0m below the ground level. Table 3-1 below presents the test borehole and trial pit location coordinates.

Table 3-1. Borehole/Trial Pit Coordinates

S/No	BOREHOLE/TRIAL PIT IDENTIFICATION	DEPTH BGL (m)	COORDINATES (ARC 1960)	
			NORTHINGS	EASTINGS
1	BH1	15.0	0805725	9315405
2	BH2	15.0	0805744	9315419
3	BH3	15.0	0805707	9315428
4	TP1	1.0	0805688	9315465
5	TP2	1.0	0805714	9315454
6	TP3	1.0	0805748	9315474
7	TP4	1.0	0805764	9315408
8	TP5	1.0	0805696	9315402

The layout showing the test point locations is presented in Appendix A.

3.1 Boreholes

Borehole drilling was carried out by rotary mud circulation rig using bentonite fluid for borehole cleaning and stabilization of the hole against collapse. The drilling was accompanied with conducting Standard Penetration Tests (SPT) into the boreholes throughout the investigation depth. SPT tests were carried out at an interval of 1.5m down to the bottom of each borehole.

The SPT procedure was to count the number of blows per 150mm penetration for a total length of 450mm. The blow count for the first 150mm represented the disturbed zone during drilling which was recorded but not considered for determination of SPT N values. The SPT blow count for the last 300mm penetration was recorded as SPT N-value. The soil samples collected from the SPT Split barrel sampler were collected in transparent air tight bags labeled and stored in a cool place. The selected soil samples were then sent to NORPLAN Soil Mechanics laboratory for classification testing.

Drilling in weathered granite rock was conducted by double tube core barrel using water as a drilling fluid to cool the diamond bit. The core barrel used was of 1.5m length. The recovered rock cores were placed in the wooden core boxes, labeled and stored in cool place before transportation to the laboratory.

3.2 Trial Pits

All trial pits at site were hand excavated to maximum depths of 1.0m below the ground level. The pits were logged and one bulk sample was collected from each trial pit. The selected bulk samples were also sent to NORPLAN Soil Mechanics laboratory for testing. The tests included sieve analysis, atterberg limits, modified proctor compaction and CBR value.

4. GROUNDWATER

Groundwater was not encountered at site for all boreholes investigated.

5. SITE SOIL CONDITIONS

Generally, the site is characterized by overburden soils between the ground surface to a thickness of about 2.6m to 6.5m below the ground level (BGL) underlain by highly weathered granite rock to a depth of 15.0m BGL where drilling was terminated. The overburden soils are uniformly distributed over the entire site and consist mainly of clayey Sands of low plasticity with thin lenses of sandy Clays of low plasticity.

The following soil profiles were obtained after field logging and laboratory classification (USCS).

a) **Borehole BH1**

0.00 – 1.20m	Dry, loose to medium dense, reddish with greyish laminations, clayey SAND of low plasticity
1.20 – 2.00m	Dry, hard, reddish with greyish laminations, sandy CLAY of

	low plasticity
2.00 – 6.50m	Dry, very dense, greyish, clayey SAND of low plasticity with gravel particles
6.50 – 15.0m	Greyish/Yellowish, weak, highly weathered granite rock

b) Borehole BH2

0.00 – 1.50m	Dry, loose, reddish with greyish laminations, clayey SAND of low plasticity
1.50 – 2.00m	Dry, soft, reddish with greyish laminations, sandy CLAY of low plasticity
2.00 – 2.80m	Dry, medium dense, greyish, clayey SAND of low plasticity with few gravel particles
2.80 – 15.0m	Greyish/Yellowish, weak, highly weathered granite rock

c) Borehole BH3

0.00 – 2.00m	Dry, loose, reddish with greyish laminations, clayey SAND of low plasticity
2.00 – 2.60m	Dry, medium dense, greyish, clayey SAND of low plasticity with few gravel particles
2.60 – 15.0m	Greyish/Yellowish, weak, highly weathered granite rock

The borehole logs are presented in Appendix B.

The trial pits descriptions obtained were as follows:-

a) Trial Pit TP1

0.00 – 1.00m	Dry, loose, reddish with greyish laminations, clayey SAND of low plasticity

b) Trial Pit TP2

0.00 – 0.10m	Dry, loose, reddish/greyish, clayey SAND of low plasticity

c) Trial Pit TP3

0.00 – 1.30m	Fill material and garbage
1.30 – 1.50m	Dry, loose, reddish/greyish, clayey SAND of low plasticity

d) Trial Pit TP4

0.00 – 0.40m	Fill material
0.40 – 1.00m	Dry, loose, reddish/greyish, clayey SAND of low plasticity

e) Trial Pit TP5

0.00 – 1.00m	Dry, loose, reddish with greyish laminations, clayey SAND of low plasticity

6. STANDARD PENETRATION TEST (SPT) RESULTS

The summary of Standard Penetration Test results is presented in the Table 6-1 below.

Table 6-1: Summary of SPT Results

Standard Penetration Test Results							
Unit weight (kN/m^3)	γ	17					
Ground water level (m)	D_w	N/A					
DEPTH BGL (m)	**SPT N - VALUES**			**Lowest N - Values**	**Effective Stress $P_{o,\ kPa}$**	**Overburden Correction Factor C_N**	**Corrected N' - Values**
	BH1	**BH2**	**BH3**				
1.5	71	4	7	4	25.5	1.8	7
3.0	80	100	100	80	51.0	1.4	110
4.5	80	Rock (N>100)	Rock (N>100)	80	76.5	1.1	90
6.0	100			100	102.0	1.0	97
7.5	Rock (N>100)						
9.0							

7. LABORATORY TEST RESULTS

Laboratory tests were carried out in accordance with the British Standard Specifications (BS1377:1990). The tests carried out include:-

- Particle size distribution analysis
- Atterberg limits
- Moisture content
- Density of solids
- Proctor compaction
- CBR value

The discussion on the Laboratory test results is referring to the results presented in Appendix C of this report.

Discussion on the laboratory soil test results;

a) **Sieve analysis**
The particle size distribution indicates that the overburden soils consist mainly of clayey Sands with thin lenses of sandy Clays.

b) **Density of solids**
The density of solids for the site soils varies from 25.5 – 25.9kN/m^3. This indicates that the site soils have high particle densities.

c) **Atterberg limits**
Most of the tested samples have shown that the liquid limits vary from 23.5 – 32.0%. The plasticity indexes also vary from 9.7 – 15.6% indicating the site soils

are of low plasticity. Table 6-1 below presents a summary of atterberg limits values.

Table 7-1: Atterberg Limits Values

Liquid limits		Plastic limits		Plasticity Index	
Min LL	Max LL	Min PL	Max PL	Min PI	Max PI
24%	35%	14%	24%	10%	15%

d) **Modified Proctor Compaction Test**

The bulk samples tested for compaction test have shown the optimum moisture content ranging from 6 – 10% and maximum dry density ranging from 1940 – 2100Kg/m^3.

e) **California Bearing Ratio (CBR) Test**

The bulk samples tested for three points CBR test (4 days soaked) have shown CBR values ranging from 2 – 20% for 90% MDD, 13 – 34% for 95% MDD and 19 – 42% for 98% MDD.

8. FOUNDATION PROPOSAL

The type of the foundation depends on the following;

a. Subsoil conditions
b. Type of structure
c. Configuration at loading points
d. Loading intensity on each sub-structure/structural element

As per client's information, the proposed structure is an office building comprising of 7 storeys. The loads from the superstructure were unknown at the time of carrying out soil investigation.

For the subsoil conditions and type of the structure, shallow pad foundations can be adopted for the proposed office building.

9. ALLOWABLE BEARING PRESSURE

The allowable bearing pressure is a function of both soil conditions and the characteristics of the particular structure. It has to take into account the ultimate bearing capacity, the amount and kind of settlement expected and the ability of the given structure to take the settlement without damages.

The Standard Penetration Test (SPT) is widely used to obtain the bearing capacity of soils directly. Meyerhof (1956, 1974) published equations for computing the allowable bearing capacity for surface-loaded footings with settlement limited to approximately 25mm. The equations could be used to produce curves similar to those of Terzaghi and Peck. Considering the accumulation of field observations and the stated opinions of the authors and others, Joseph E. Bowle's (*Foundation Analysis and Design, 5th Edition*) adjusted the

Meyerhof equations for an approximate 50% increase in allowable bearing capacity to obtain the following equation.

$$q_{all} = N/0.08[(B+0.3)/B]^2 * K_d \qquad \text{for: } 0 \le D \le B \text{ and } B > 1.2m$$

Where:-

q_{all} = Allowable bearing pressure for 25mm settlement, kN/m^2

$K_d = 1 + 0.33(D/B) \le 1.33$ [as suggested by Meyerhof (1965)]

N = Statistical average of SPT N values for the footing influence zone

B = Foundation width, m

D = Foundation depth, m

For computation of allowable bearing capacity; we have considered a shallow pad foundation type with an assumed size of 3.6mx3.6m placed at a depth of 1.5 - 2.0m, 2.0 - 2.5m and 2.5 - 3.0m below the ground level.

Table 9-1 below presents the computation of allowable bearing pressures.

Table 9-1: Computation of Allowable Bearing Pressure

Allowable Bearing Pressures from In-situ SPT Data						
Isolated Pad Foundation						
Unit weight (kN/m^3)		γ	17			
Ground water level (m)		D_w	N/A			
Foundation width (m)		B	3.6			
Foundation length (m)		L	3.6			
Foundation Depth BGL (m)	**Design N' - Values**	**Meyerhof correction factor Kd**	**Groundwater correction factor C_w**	**Allowable Foundation Pressure for ΔH_o=25mm Settlement (kN/m^2)**	**Allowable Foundation Pressure for ΔH_i=50mm Settlement (kN/m^2)**	
1.5 - 2.0	7	1.14	-	117	234	
2.0 - 2.5	13	1.18	-	226	451	
2.5 - 3.0	50	1.23	-	902	1803	

10. CONCLUSIONS AND RECOMMENDATIONS

As a result of field activities carried out, the analysis of in-situ test results and laboratory soil test results, the following engineering conclusions and recommendations can be made:

a) The geotechnical investigation has revealed that the site is characterized by overburden soils between the ground surface to a thickness of about 2.6m to 6.5m below the ground level underlain by highly weathered granite rock to a depth of 15.0m below the ground level where drilling was terminated. The overburden soils consist mainly of clayey Sands of low plasticity with thin lenses of sandy Clays of low plasticity.

b) Groundwater was not encountered at site for all boreholes.

c) The allowable bearing pressure of 200kPa can be allowed for the assumed pad foundation size of 3.6x3.6m to be laid at a depth of 2.0 – 2.5m below the ground level for settlement limited to 25mm. In case of different foundation size the allowable bearing pressure needs to be re-computed.

d) Protection for side soils is not anticipated during excavations.

11. LIST OF APPENDICES

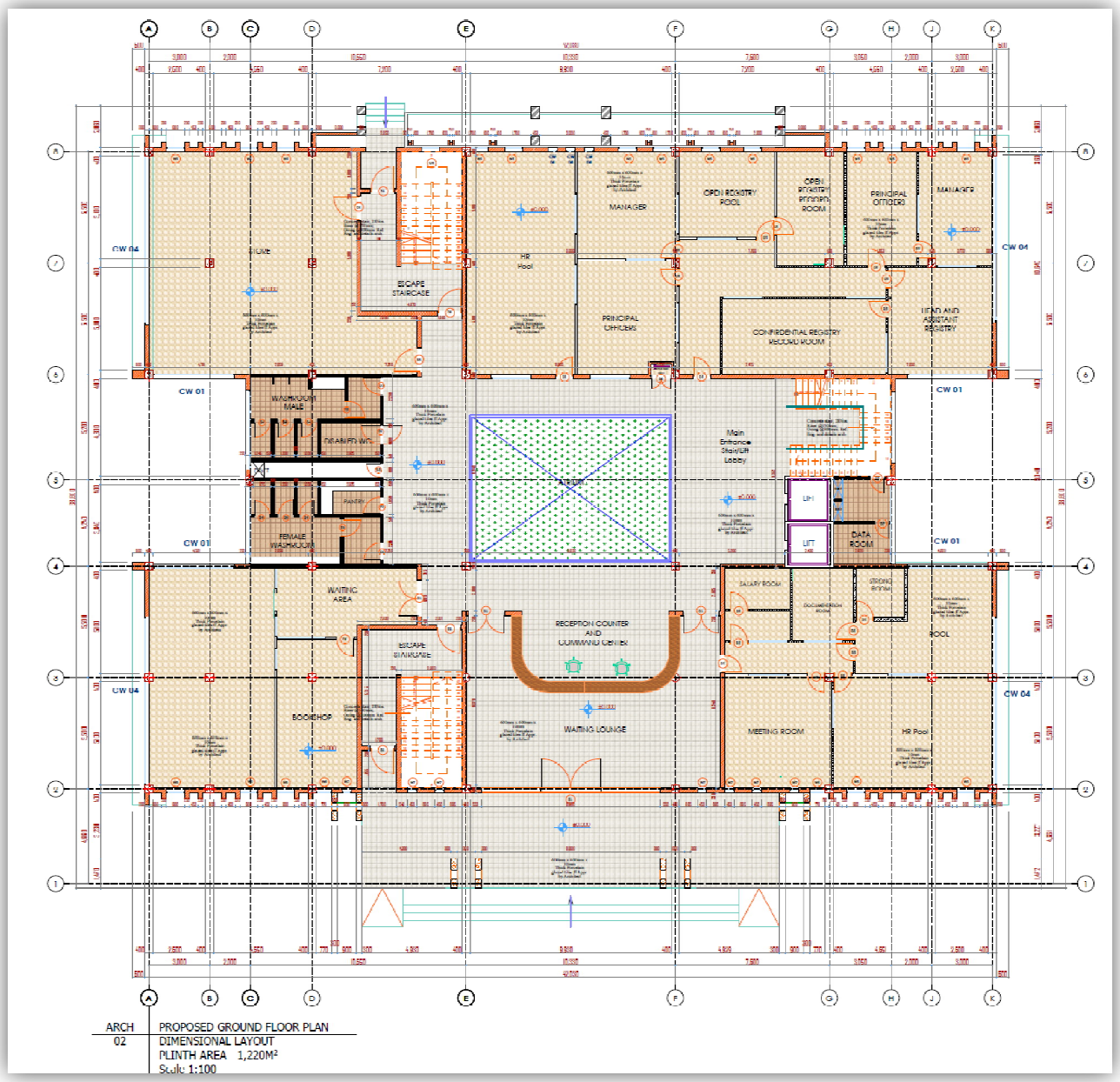
Appendices annexed to this report are summarized. They are:

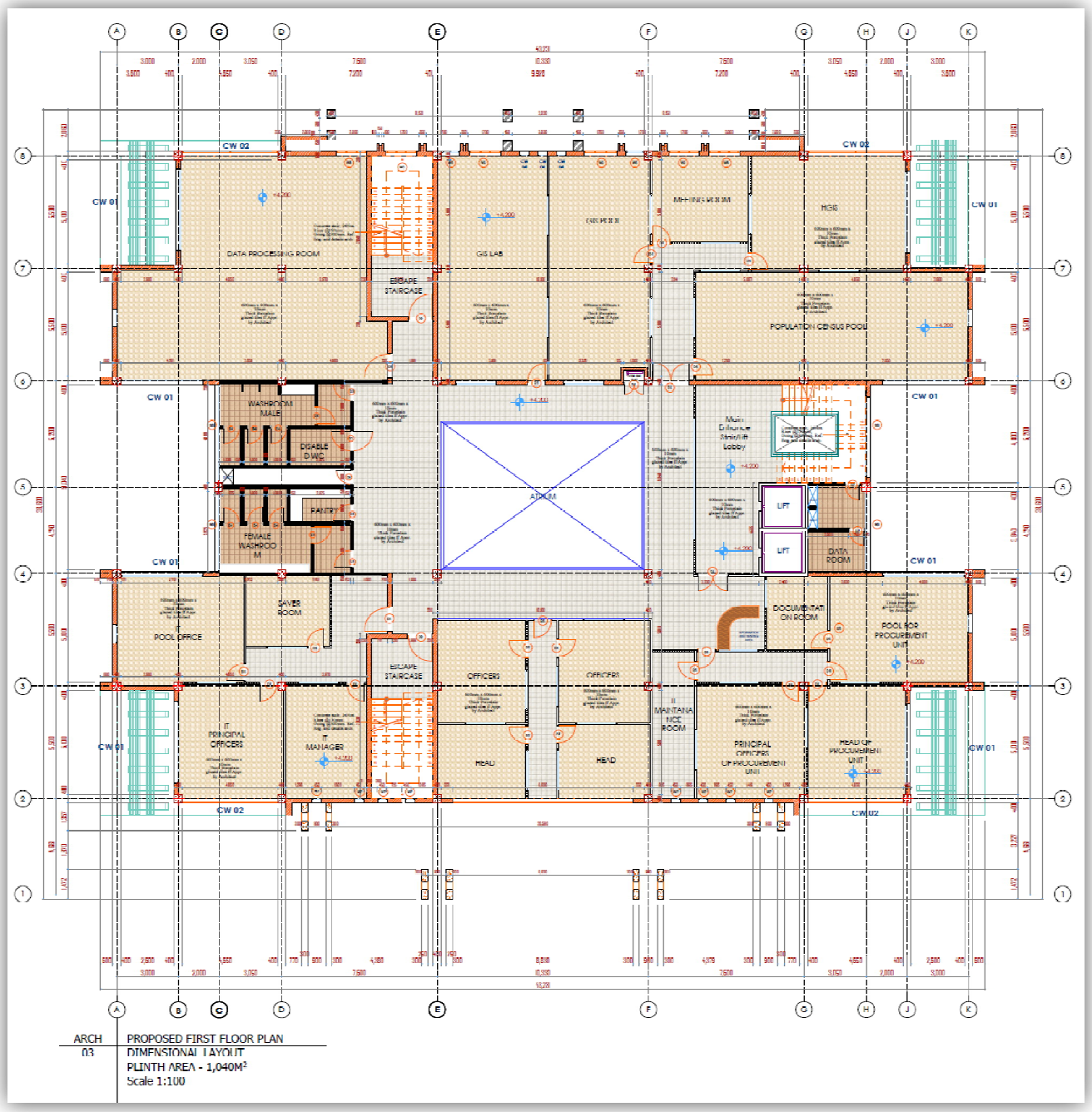
APPENDIX A:	Borehole Layout Plan
APPENDIX B:	Borehole Logs
APPENDIX C:	Laboratory Test Results
APPENDIX D:	Site Photographs

A.10: Project Drawings

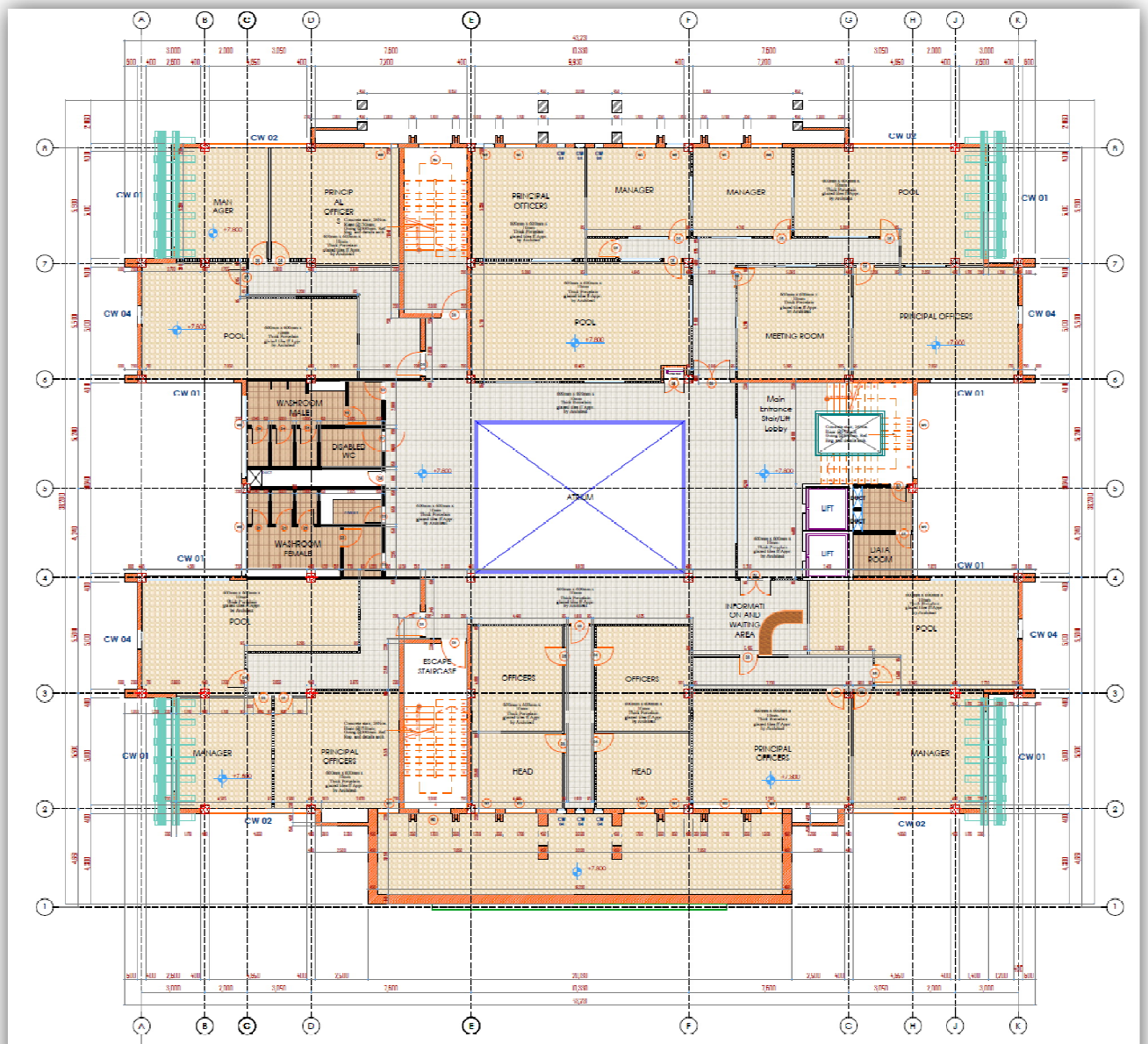
Proposed Perspective View

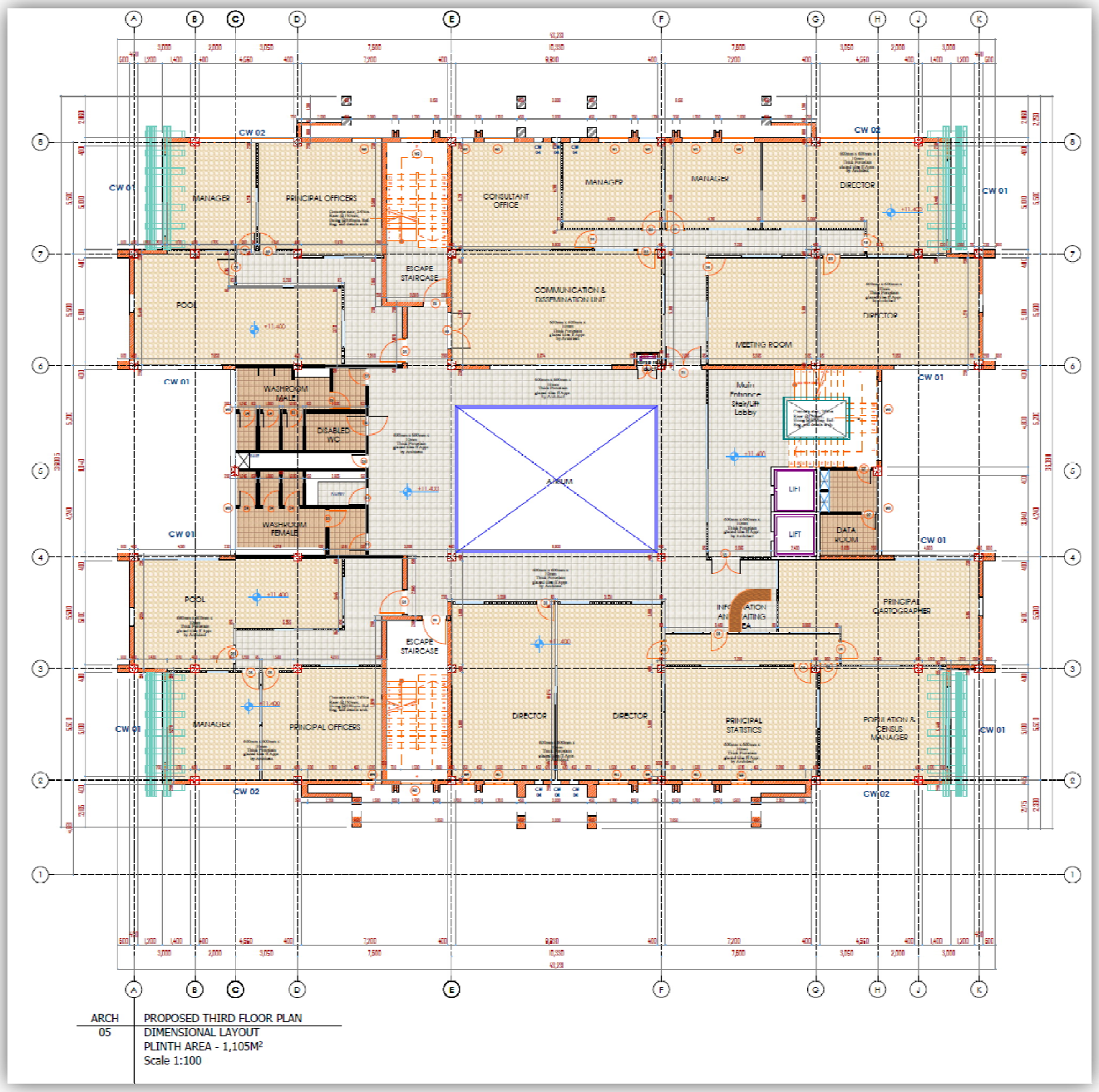
Proposed Other Perspective Views


ARCH
02
PROPOSED GROUND FLOOR PLAN
DIMENSIONAL LAYOUT
PLINTH AREA 1,220M²
Scale 1:100



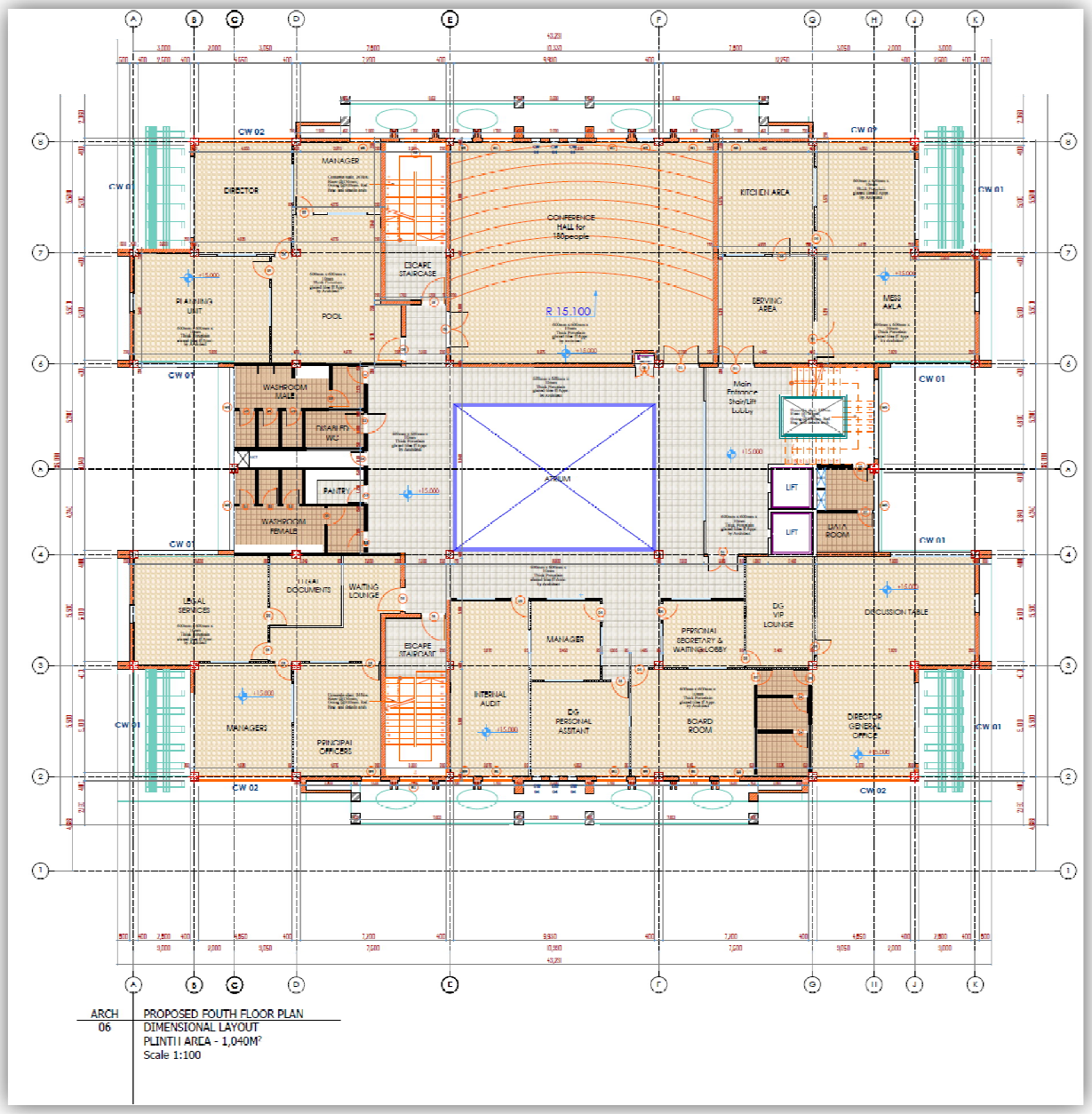
ARCH 03 PROPOSED FIRST FLOOR PLAN
DIMENSIONAL LAYOUT
PLINTH AREA - 1,040M²
Scale 1:100


CW 01
CW 02
CW 04
MANAGER
PRINCIPAL OFFICERS
POOL
MEETING ROOM
WASHROOM MALE
WASHROOM FEMALE
DISABLED WC
ATRIUM
Main entrance Stair/Lift Lobby
LIFT
LIFT LOBBY
ESCAPE STAIRCASE
OFFICERS
HEAD
INFORMATION AND WAITING AREA
ARCH 04
PROPOSED SECOND FLOOR PLAN
DIMENSIONAL LAYOUT
PLINTH AREA - 1,105M²
Scale 1:100

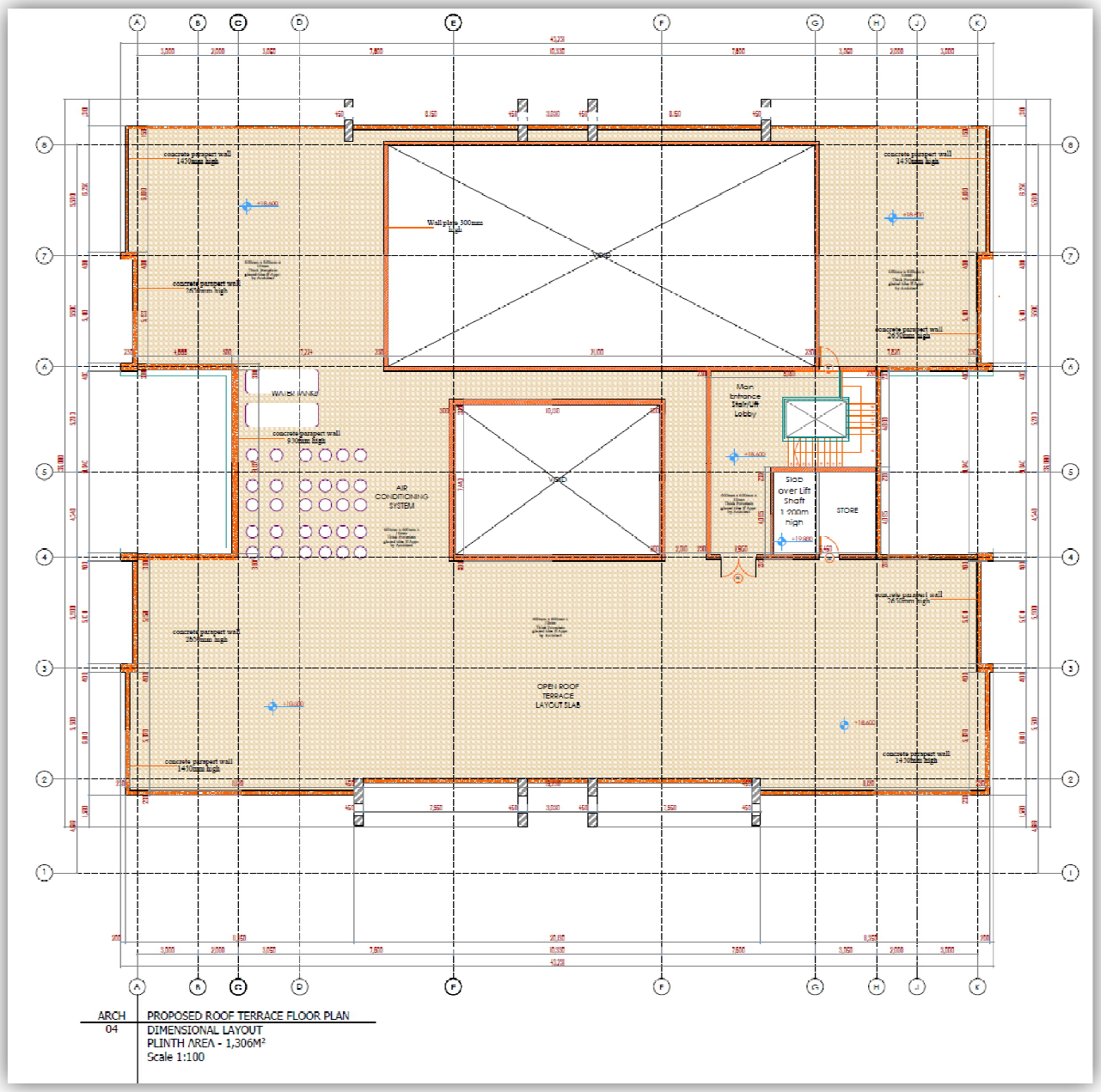


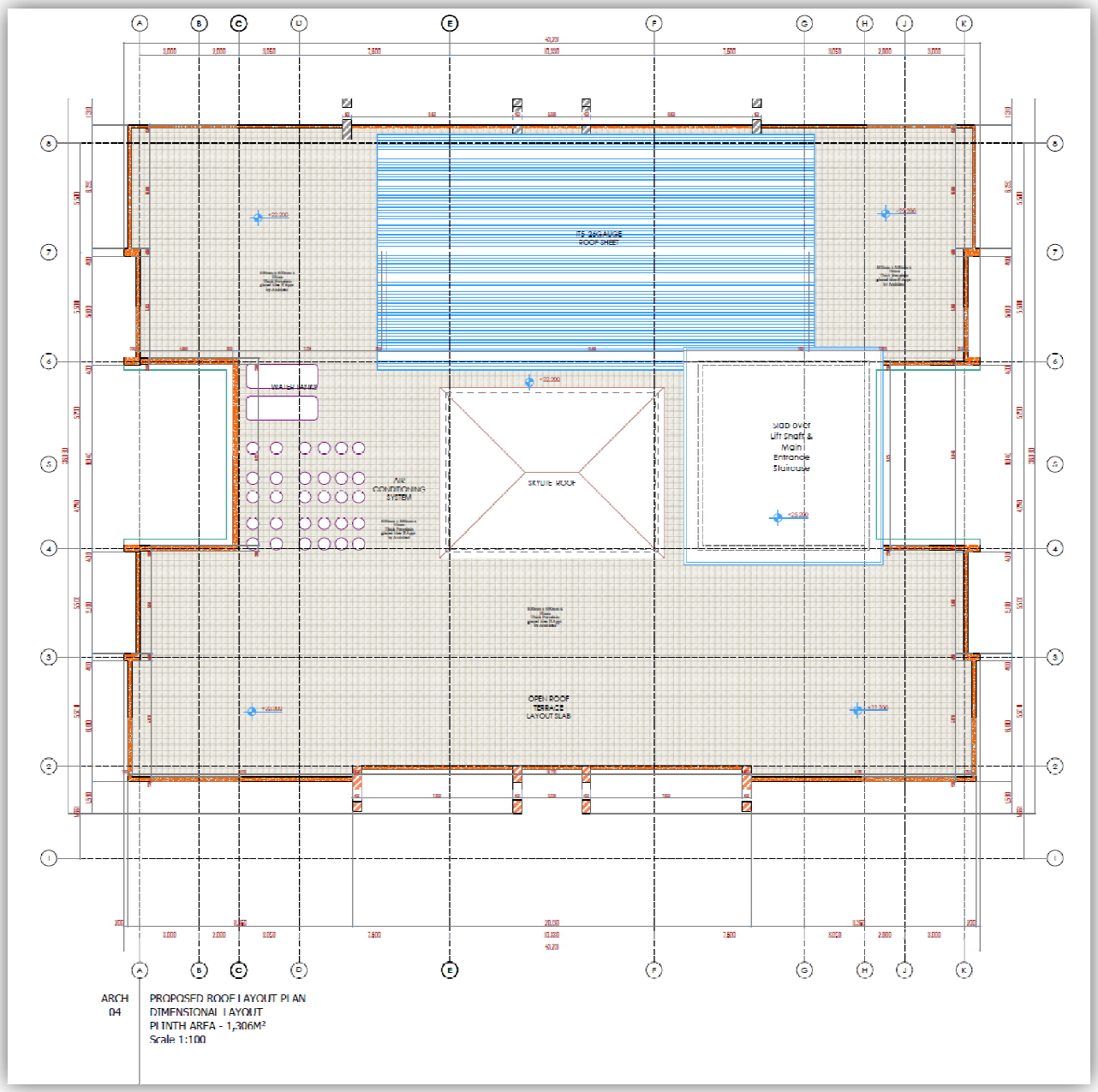
ARCH 05

PROPOSED THIRD FLOOR PLAN
DIMENSIONAL LAYOUT
PLINTH AREA - 1,105M²
Scale 1:100

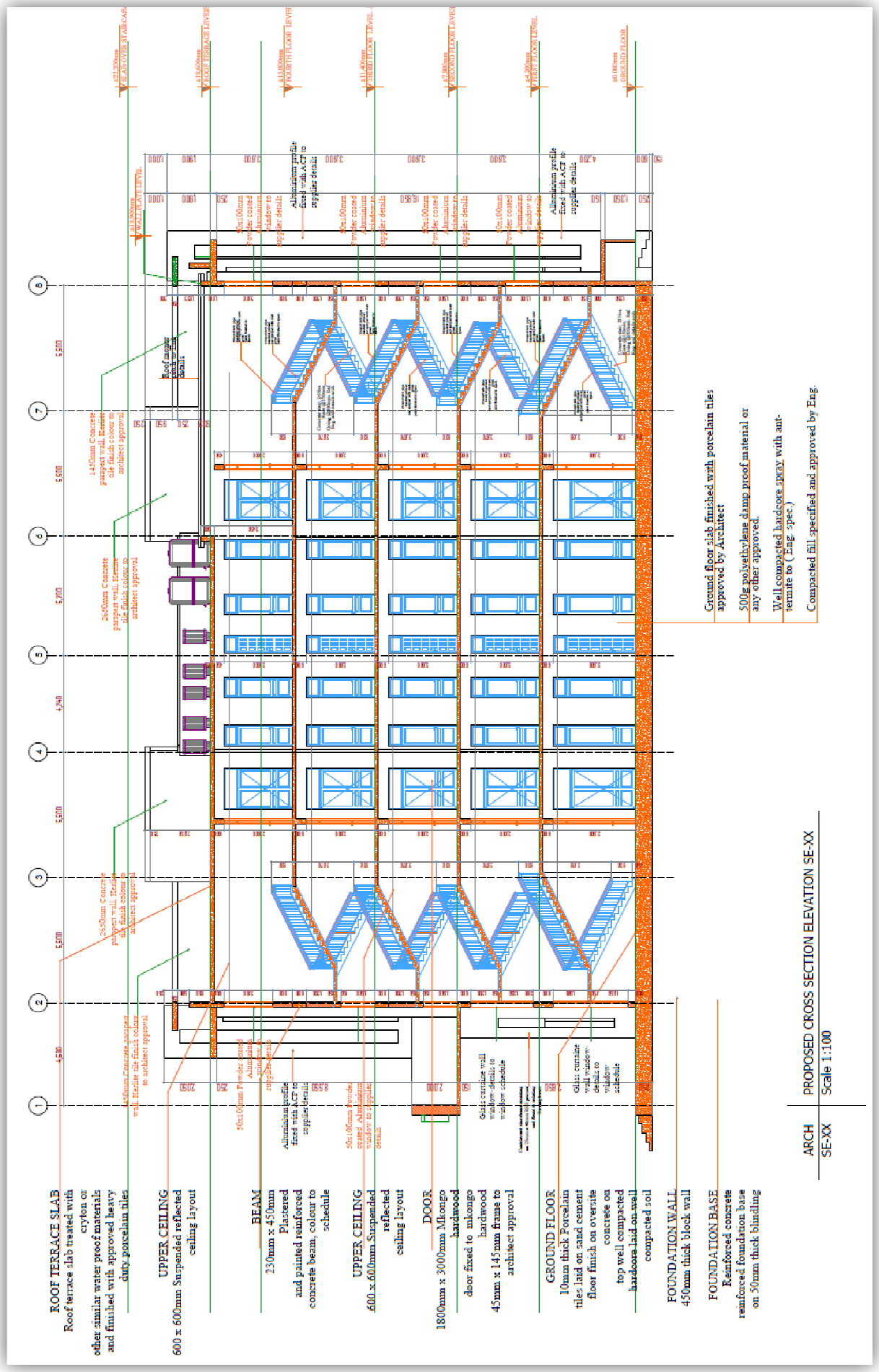


ARCH 06 PROPOSED FOUTH FLOOR PLAN
DIMENSIONAL LAYOUT
PLINTH AREA - 1,040M²
Scale 1:100


concrete parapet wall 1430mm high
Wall plate 300mm high
concrete parapet wall 2670mm high
WATER TANKS
concrete parapet wall 830mm high
AIR CONDITIONING SYSTEM
Main entrance Shelt/Lift Lobby
Slab over Lift Shaft 1 000m high
STORE
OPEN ROOF TERRACE LAYOUT SLAB
concrete parapet wall 2670mm high
concrete parapet wall 1430mm high
ARCH 04
PROPOSED ROOF TERRACE FLOOR PLAN
DIMENSIONAL LAYOUT
PLINTH AREA - 1,306M²
Scale 1:100



ARCH 04 PROPOSED ROOF LAYOUT PLAN
DIMENSIONAL LAYOUT
PLINTH AREA - 1,306M²
Scale 1:100


ROOF TERRACE SLAB
Roof terrace slab treated with cryton or other similar water proof materials and finished with approved heavy duty porcelain tiles
UPPER CEILING
600 x 600mm Suspended reflected ceiling layout
BEAM
230mm x 450mm Plastered and painted reinforced concrete beam, colour to schedule
UPPER CEILING
600 x 600mm Suspended reflected ceiling layout
DOOR
1800mm x 3000mm Mkongo hardwood door fixed to mkongo hardwood 45mm x 145mm frame to architect approval
GROUND FLOOR
10mm thick Porcelain tiles laid on sand cement floor finish on oversite concrete on top well compacted hardcore laid on wall compacted soil
FOUNDATION WALL
450mm thick block wall
FOUNDATION BASE
Reinforced concrete reinforced foundation base on 50mm thick blinding
Ground floor slab finished with porcelain tiles approved by Architect
500g polyethylene damp proof material or any other approved.
Well compacted hardcore spray with anti-termite to (Eng. spec.)
Compacted fill specified and approved by Eng.
ARCH
SE-XX
PROPOSED CROSS SECTION ELEVATION SE-XX
Scale 1:100

A.11: TAC Comments- Response Table

Comments Response Table on the EIA for the Proposed Development of Five (5) Storey New NBS Office building in Plot No 8, Block "A" Salmin Sub-ward, Tambukareli ward, Dodoma Municipality in Dodoma Region

1.0 General Comments		
	Comments	**Response and the area in the report where the comment has been addressed**
1.	The content and arrangement of the document on the cover page should adhere to EIA and Audit Regulations 2005 Regulation 18(3)	The arrangement is adhered to
2.	The acknowledgement should be addressed by the developer and not the Consultant. Other EIA study team members who are not registered as EIA experts should be acknowledged together with their specialization	The acknowledgement was addressed by NBS from the beginning. This is also maintained in the final report
3.	On the cover page recast the title to include the administrative mtaa, ward and region for the project location. Recast it to read as proposed development instead of construction	Sub-ward (mtaa) and region of the project title are now added
4.	Provide all relevant permit and attachments such as Geotechnical report and summary, Title deed, approved drawings	Geotechnical Report summary is appended under Appendix A9. Acquisition of the Title deed is in progress and the drawings are still with CDA for approval and acquisition of a building permit
2.0 Specific Comments		
Review Area 1: Description of the development, Local environment and baseline conditions		
1	In Chapter one include information about rationale for carrying out the EIA study and dates when the scoping study was undertaken for preparation of TOR	Rationale of EIA study included under subsection 1.2. Dates of scoping exercise is under sub-section 1.1 of the report
2	On the project background provide clear and detailed explanations of the developer's profile	Proponents profile presented under 1.1 Background information
3	On Page 2 section 2.2 on the location, provide coordinates of the project (lat./long.)	Coordinated provided under sub section 2.2 project Location
4	Include the EIA rationale and project objectives in the document	See response 1 above and project objectives is presented under 2.1
5	In Chapter 2, provide the following information;	
	Description of the land use of the project area/plot	Presented under sub section 2.3
	Emergency assembly area	Presented under subsection 2.4 preliminary design of the project and on layout drawing on figure 12 page 20 of 162.
	Landownership, size of the plot, plot ratio and plot coverage	The land ownership title is in progress.

	Expected water demand during construction phase and the source	Presented under Table 2 section 2.6.2
	Expected energy demand	Presented under Subsection 2.6.2 on the table
	Bills of Quantities (BOQ) for this project	The Bills of Quantities is contained on 120 pages volume, almost the size of the EIA report. On environmental point of view this volume may be supplied by the Client on separate volume
	Status of storm water drainage near the site	There is no built up storm water system existing on site. It will be built to match the existing features.
	Neighbouring developments in N-S-W-E sides	Presented under sub-section 2.3 also on figures 4 to 6.
	Number of parking lots and whether they are in one of the floors or outside	The parking lots are 90 and all are outside the main building
	Describe the number of people to be employed during each phase of the project	Presented in sub -sections 2.5.1, to 2.5.3
6.	On page 20 section 2.2 narrow the map to Dodoma region level and clearly show the project site	The referred map is for Dodoma Region. The approximate location of the project site is shown on the map.
7.	On page 25 section 2.3, on the preliminary design describe the plot size, plot coverage and ratio for the project	Presented under Subsection 2.4
8.	On page 22, provide the distance between the proposed project site and all border facility/component e.g. road, sewer, etc	Distances for utilities is presented under sub-section 2.3
9.	On page 25 section 2.3, briefly discuss the project component in each floor by including activities to be conducted, size of each floor and the capacity in each component	Presented under sub-section 2.4 table No. 3
10	On page 27 section 2.4 provide detailed description of each project phase e.g. activities to be conducted time /duration, manpower, types of waste, management of waste and the final disposal	Presented under subsection 2.5
	Name the location and the status of the existing dump site and the liquid waste stabilization ponds	The exiting dump is at Nala on the way to Singida and Waste stabilization ponds at Swaswa north of the project site. All explained under section 2.5 1, 2.5.2 and 2.5.4 and 2.6.2
	Size of each floor and use	See subsection 2.4
	Expected amount of solid and liquid waste during mobilization, construction and operation phases. State also how they will be managed	Subsection 2.4
	Expected clean water demand and their source during operation	Presented under Section 2.6.4
11.	Page 29 section 2.5.2, state if the specified	It is now under 2.6.2. The sources

	source of material is authorised	are privately owned and authorised by the Ministry of Energy and Minerals through issuance of Mining Licenses
12.	On page 53 section 4.0 narrow down the information in the baseline chapter to the project site	Most of the information available is for the municipality level. The site specific baseline conditions like soils which have been presented accordingly
13.	In chapter 4 discuss the major findings from the geotechnical study report, topography and soil, hydrology and ground water quality and air quality,	Presented under subsection 4.4.1
14.	On page 46, it is stated that endangered flora and fauna will be encountered, clarify on this if there is a study done on flora and fauna	Study was done on site but no endangered species were found. This is due to the fact that the area is under continuous cultivation. The statement was "if endangered species are encountered…." not "….will be encountered…." as stated in the TAC comment
15.	On page 112 clarify on the issue that the waste in the landfill, plastic and other recyclable materials will be collected and set out for recycling	This is a mitigation measure for solid and liquid waste generation presented under subsection 7.2.2 under solid and liquid waste generation
16.	On the legal section link the identified laws, regulations, policies and conventions direct to the project and include the following legislations and provide their relevance to the project.	All legal section is purely linked to the project as required.
	Fire and Rescue Force Act, 2007	Presented under section 3.3.3
	Workers compensation Act, 2008	Presented under section 3.3.4
	Environment Management (Air quality standards, Water Quality Standard, Soil Quality Standards) of 2007	Presented under subsection 3.3.3 Acts and Regulations to safeguard natural resources air water and soil
	Control of noise and vibration regulation 2015	Presented under subsection 3.3.3
	The mortgage Financing Act, 2008 (Special Provision) No.17	This is not relevant to this project
	Dodoma Master plan or redevelopment Scheme in the central area of Dodoma Municipality if any	Document not found
17	On page 45 table 3, the provided MARPOL convention is for marine pollution hence not relevant to this project considering its location	This was considered in case the NBS project would need to ship anything into the country from overseas
Review Area 2: Identification and Evaluation of key impacts		
1.	Indicate the methodologies that is used in identification, analysis and evaluation of	The methodology is presented under subsection 6.6.

	impacts	
2.	Identification and explanation for impacts per phases should not include analysis aspects such as –ve and +ve issues	The comment is not understood
3.	Identify impacts which may result due to earthquake effect since Dodoma is within the area vulnerable to earthquake	Earthquake impacts and mitigation actions are presented on respective sections during operation phase of the project
4.	Evaluation/assessment of impacts especially significances of cumulative and residual impacts should be provided	Cumulative impacts can be defined as effects on the environment which are caused by the combined results of past, current and future activities. Unfortunately none of these have been noted so far! Our ability to assess cumulative effects is hindered by the lack of information on past management activities and the uncertainty of future events Residual impacts – According to the definition of residual impacts, so far no residual impacts are predicted for the construction and operation of the office building
5.	Page 70 2nd paragraph shows that the access to safe water is a problem in Dodoma. Identify and discuss impacts such as waterborne diseases due to consuming unsafe water, high pressure demand on the scarce clean water available, high cost life due to scarcity of water etc during all phases of life cycle of the project and provide the mitigation measures	This is the general baseline in Dodoma Municipality specifically in the residential areas which is different from the project site. According to DUWASA, the project site is proximal to the water main and has enough water for the project and neighbouring projects such as Convention centre and other projects on going. Water borne diseases is the problem to be solved by DUWASA and not by the project.
6.	Provide discussion on impacts from transportation of construction materials to the proposed project site	It is stated that the materials on transit will be covered with tarpaulins to avoid dust. Presented as item (g) under subsection 6.3.2 assessment of impacts during construction [phase
7.	Exhaust the project impacts during operation phase e.g. impacts due to increased population	This is a town set up and not a village, a population increase 200 employees cannot have a significant effect. The impact of increase in population is a SEA issue for relocating the government offices to Dodoma

Review Area 3: Alternatives, Mitigations , EMP and Commitment		
1.	Ensure impacts in Chapter 7 (Mitigation measures, Chapter 8 (Management Plan) and Chapter 9 (Monitoring Plan) are the same. The chapters should not have different impacts	These are the same throughout the three chapters.
2.	Mitigation measures should be described per phases from mobilization, construction, operation to decommissioning phases	The impacts and mitigation measures are presented in phases- see subsections 7.2.1, 7.2.2 and 7.2.3
3.	Clearly provide mitigation measures for waste water, runoff water, vulnerability to theft, outbreak of diseases including HIV/AIDS, traffic congestion during construction and operation and hazardous wastes	Presented under subsection 7.2.2 in the report
4.	Improve content of chapter 11 on page 122 by including the decommissioning plan which shows impacts during the end of life, measures to manage them and cost.	The decommissioning plan for a structure that will exist for 50 years or more cannot be realistic. it is a mere speculation. As stated before the building office is not like manufacturing facilities whereby the methods used to manufacture some products are increasingly replaced by modern technology or process!
5.	Page 123, improve chapter 12 (Summary and Conclusion) by summarizing the strength and weaknesses of the project environmentally and hence provide your conclusion	This is an Environmental Impact Assessment and not an Environmental Audit where the project strengths and weaknesses can be evaluated. Impacts have been identified and corresponding mitigation measures have been proposed. When mitigation actions start being implemented that is when the weakness or the strengths can surface
6.	Provide alternatives in terms of technology, waste management	Presented under Subsection 6.5.4 in the report
Review Area 4: Stakeholders Participation and Communication of Results		
1.	The design of the building should consider the effects of earthquake since the area is within the zone of earthquake	Design has considered some safety parameters against earthquake. Designs are made according to zones.
2.	Important supporting documents are missing. Attach them	All attached as shown below
	Title deed (A letter in Appendix A8 is indicated as landownership evidence. It is not. That letter just directs the process of acquiring landownership	Title deed is being processed TAC members who went to Dodoma verified that all the payments have been made and the process for issuance of title deed is in good progress
	Site layout plan	It was included as figure 12 in the

		report; it is now presented as figure 12 in the final report.
	Floor plans	All included under Appendix A.9
	Elevation plans	All included under Appendix A.9
	Geotechnical Study report for the plot	Included under Appendix A.10
3.	Signatures of the key stakeholders to this project are missing e.g. Mtaa, CDA, Municipal Land Use Planners, Municipal Environmental Management Officers, DUWASA, TANESCO, TTCL, etc (refer to page 79-80)	The key stakeholders available at the time of consultation were met and signed as required. Those whose signatures do not appear were either not present during the meeting or were out of their offices.
4.	In Chapter 5 provide the issue response table for all issues raised by the stakeholders including those listed on page 79-80 and page 143	Not all issues have responses from the Consultants, some of the issues are for information only and there is nothing the consultant can do to respond to an obvious issue. Also most of the comments made by the Authorities were in response to Consultants questions
5.	Provide sources and time for the photos, information used within the document e.g. tables.	All sources provided and where possible time is also presented
6.	The report also is missing non technical summary, as separate documents as required by EIA and Audit Regulations, 2005, regulation 19 (2) both in English and Swahili. Observe the suggested format for such summary.	Non-technical executive summaries in English and Swahili languages are presented as separate documents
7.	On cover page better put elevation plan or 3D drawing of the building since they readily portray the look/shape of the building (instead of the floor plan used).	3D drawing included on the cover page as suggested
8.	State the time when the EIA study was conducted	Presented under sub-section 1.1 Last paragraph.
9.	Regarding presentation/ readability of the report, observe the following	As shown below
	On cover page, revisit the font sizes used so as to distinguish important/roles of different actors. For example , title of the project, developer, consultant, approving institution, submission date, all these have different importance/roles but they all appear with the same font size	Font sizes revisited on the cover page
	Increase the font size of the whole report to make easily readable. Seems you used font size10 or less, increase it to 12.	All font size are 12 and above
	Recast/revisit the style of stating a chapter so that it is easy to spot the start of the chapters. For example , all title of chapters can be in capital letters	All chapter titles capitalised as suggested
10.	Provide the project life span	The life is estimated to be above 50

		years presented under subsection 11.1
11.	Provided figures e.g. on page 21 are not readable	The map is provided for indicative purposes only. That is the location of the site in relation to the region. It has been enlarged to match A4 size of the paper.
12.	In the reference incorporate all the materials used	More reference materials added
13.	As the EIA study is done by a team, remove the text appearing in the footnote.	Text on footer deleted